Industrial Equipment News

FOUNDED 1933

ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as IEN - 3649

SAWING . . Portable band saw for free hand use in any position

Source: PORTER-CABLE MACHINE CO.
33 Exchange St., Dept. IEN, Syracuse 8, N. Y.

Self-feeding weight is 16 pounds

The operator of this new saw picks it up with both hands, applies it in any position on work to be cut for production, maintenance, or construction purposes. He starts the ¼-hp. 110-volt universal motor by depressing a trigger switch. The motor drives the band blade at 240 fpm. The saw will cut round stock to ¾ in. in diameter, rectangular stock to 3¼ by 4¼ inches. Interchangeable blades are available, in a range of 6 to 32 teeth per inch, for ferrous and non-ferrous metals, plastics, wood, composition materials.

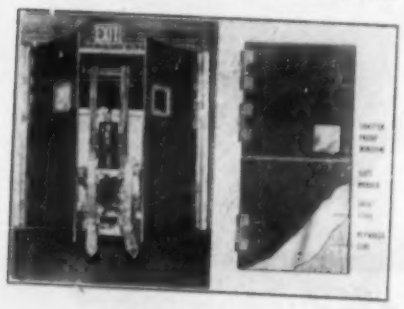
The machine measures 19½ in. in length, 7½ in. in width and height. Its housing is die cast aluminum. Rotating shafts are protected by leather and neoprene seals to exclude dirt and retain grease. The sawing action pulls the blade into the cut so the rear work rest anchors against the work. No back-up effort is required of the operator.

List price of the Model 524, with one blade, a tube of grease, an Allen wrench and a 10-ft. cord and plug, is $215. Illustrated details, with prices of the standard equipment and accessories, are contained in Bulletin A984.

If you write maker identify as IEN - 3650

DOOR . . Rubber covered design, steel-plywood body for factory use

Source: AMERICAN HARD RUBBER CO.
93 Worth St., Dept. IEN, New York 13, N. Y.



Bulletin, "DuraDor"

Trucks can ride against this new Ace DuraDor, to open it, without injury to the door or the truck. It can be employed in trucking aisles for general heavy duty service, in chemical plants where corrosion is a factor, in plating and pickling departments in the presence of fumes and splashing liquids. It is available in a range of sizes with hinges ready to install.

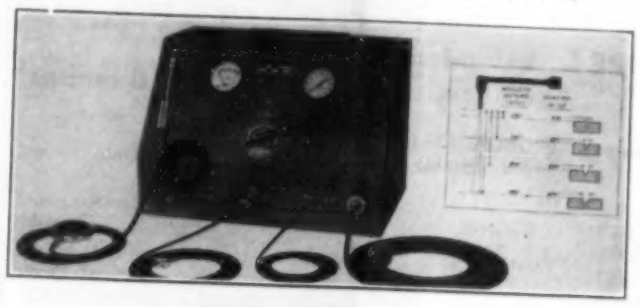
Lightweight plywood forms the core. It is covered with sheets of reinforcing steel and a coating of soft tough rubber. The rubber is ¾ in. in thickness at the edges. The window is made of shatter-proof Lucite. The structure will not splinter, sag, bend or warp. It closes tightly to prevent heat loss or cold drafts. It minimizes danger to workers who pass through.

BUY
EASTER
SEALS

If you write maker identify as IEN - 3651

CUTTING . . Abrasive jet equipment for hard metals, glass, ceramics

Source: S. S. WHITE INDUSTRIAL DIVISION
10 E. 40th St., Dept. IEN, New York 16, N. Y.



Details in Bulletin 5307

Thin sections of very hard materials can be cut through. Hard and brittle materials can be cut, etched, burred, polished. Metallized films can be removed selectively from the surface of glass and ceramics, without appreciable rise in temperature, with this new design of the company's Airbrasive equipment, previously described IEN-8321-52. The abrasive particles, about 27 microns in size, are aluminum oxide or magnesium or calcium carbonate prepared and supplied by the company for use in the equipment.

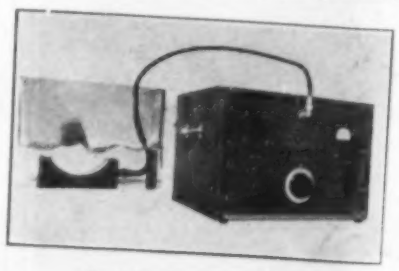
Assembly includes a control and feed housing, a hand piece with a right angle nozzle and tubing, a foot switch and extension cord and a three-wire plug for connection to a 110-volt 60-cycle ac. circuit, a blow-off tube and a 30-lb. can of the abrasive powder.

The user supplies the source for clean dry inert gas by employing a pressure cylinder of carbon dioxide or nitrogen. He also provides a dust exhauster hood in which the work is carried on. This hood should be able to handle about 200 cfm. of dust laden air. The abrasive is used once only. A charge of about 11 oz. in the mixing chamber in the control housing will last for ½ to ¾ hr. of continuous operation for cutting glass, depending on the depth of cut desired.

If you write maker identify as IEN - 3652

CLEANING . . Ultrasonic generator and transducer to agitate solvent

Source: BRANSON INSTRUMENTS INC.
430 Fairfield Ave., Dept. IEN, Stamford, Conn.



Speeds metal cleaning

Cleaning action is accelerated to remove soil from products and parts, such as electric motors, instruments, watches, bearings, glass tubes, quartz crystals, castings with blind threaded holes, by this new Sonogen ultrasonic equipment. The transducer is connected to the generator and is immersed in a non-conductive cleaning solvent to impart agitation to the liquid at 450,000 cps. This agitation helps separate the soil from the work. A knurled part, for example, that required 10 min. conventional rinsing, was cleaned in 2 sec. by application of the new equipment.

The Model 500 generator provides a radio-frequency output of 500 watts from a 110 or 220-volt ac. input. It connects through its output cable to the transducer, a section of a 6-in. cylinder of barium titanate with surface area measuring 15 or 30 square inches. The cylindrical surface concentrates agitation at a focal region where the cleaning action is most active. Special vessels, with thin stainless-steel bottoms, are employed when electrically conductive solvents are used so the transducer can be immersed in an isolated non-conductive liquid. List price for the generator and a transducer is $980. The company is prepared to advise on specific applications.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

APRIL, 1954
VOL. 22 No. 4

PRODUCT FINDING INDEX

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

ABRASIVES 41, 62, 73, 82*, 87, 107, 121*
Accumulators, Hydraulic 75*
Adhesives 36*, 63, 65*, 102*, 113*, 119
Alloys 20*, 22, 57
Aluminum 92
Amplifiers, Magnetic 82*

BALANCING 82*
BALLS, Metal 69
Sapphire 6
Batteries 122*
Bearings 2, 20, 46, 82*, 93, 96*, 106, 108*, 109
Bellows, Metal 80, 93
BELTS, Conveyor 20*, 54*, 58, 103
Dressings 69
Fastenings 34
Transmission 52
Benches 26
Bending 6, 12, 22, 50, 59, 82*, 97
Bins 19, 85
Blowers & Fans 11, 40, 49, 51, 67*, 92, 95, 128
Boilers 34, 65
Bolts 33, 65, 68
BOOTHS, Spray 55*, 55, 92
Telephone 12*, 52
Boring 33, 100
Boxes 18, 30, 58*
Brazing 2, 60
Bronze 20, 57
Brushes 22
Buckets, Clamshell 35
Buildings 22*, 46*, 46, 70*, 72
Burring 62, 104*
Bushings, Drill 83, 99

CABINETS 4, 54*, 64, 99*
Cable, Electric 3, 10, 15, 82*, 93, 97*, 115, 127
Calculating 41
Capacitors 38*, 69*, 81, 94*, 101
Carbide Parts 78*
Cars 101
Casters 16, 71, 108, 122*
Castings 68, 82*, 102
Cement, Iron 29
CHAIN 7, 47
Chairs 101*
Chemicals 82*
Chucks 7, 14*, 50, 58, 65, 116*
Circuit Breakers 67
Clamps 25*, 28, 46, 55*, 69, 98
CLEANING
Blast 5, 38, 50, 69*, 103*
Blower 11, 49
Floor 22, 66, 110
Materials 46, 48, 72*, 82, 107*, 112, 116*, 118, 125
Rotary 35, 36
Ultrasonic 1*
Vacuum 11, 22, 36, 49, 65, 79, 82*
Vapor 81
Washing 55, 73*, 82*, 94*, 112, 113*, 114*
Clothing, Protective 17, 102
Clutches 2*, 45, 107
Collars, Shaft 121
Communicating 12*, 42, 52*, 52, 55, 115*, 122
Comparators 24
Compressors 14, 18*, 21, 47, 59*, 62, 71, 75, 92, 95, 109, 115
Conductors, Electric 3, 10, 13, 15, 16, 69*, 93, 97*, 115, 127
CONDUIT 82*
Fittings 76, 113
Connectors, Electric 25, 35*, 43, 44*, 66*, 82, 100, 105*, 105, 106, 108, 110, 113*
Construction 53
CONTROLS
Electric 76*
Electronic 48, 49*, 62
Engine 92*
Liquid Level 42, 82*
Machine Tool 48*
Material Level 83
Positioning 67, 112
Pressure 5*, 19*, 37*, 38*, 39*, 55, 91, 117
Process 46*, 83*, 117*
Production 104
Temperature 24, 32, 39, 48*, 61*, 75, 83*, 87, 97, 103, 114
Viscosity 101*
CONVEYING
Belt 6, 13*, 17*, 20*, 52, 54*, 58, 67, 78, 83*, 103, 108*, 122
Chain 7, 14, 83*
Overhead 6, 11*, 35, 47
Roller 36*, 68*
Wheel 10, 128
Cooling 3, 10, 20, 21, 44, 80*
Corrosion Proofing 12*, 16*, 40, 52, 53, 66, 84, 101*, 101
Counting 32*, 42, 50, 68*, 85, 95*, 105, 106, 119*
COUPLINGS, Hydraulic 53
Shaft 23, 53*, 84
COVERS, Dock 21
Guide Pin 40
CRANES 54, 64, 74, 83*, 83
Brakes 15
Creams, Hand 6*, 121
Crushing 26
Cutouts, Overload 58
CUTTING, Abrasive 1*, 3*, 19*, 96
Flame 33, 126
Machines 9*, 81, 89
Tools 5, 36, 65, 83, 95*, 97, 102*, 124
Cylinders, Power 21, 28, 31, 56, 61, 79*, 83*, 88, 112, 115

DEGREASING 81, 112
Demagnetizing 91*
Detectors, Metal 5, 45*
Diaphragms 120
Die Castings 28, 122
Die Casting Equipment 53*
Dispensing 24, 31, 39, 46, 65*, 65, 68*
DOORS 1*, 14, 81, 121
Hardware 38
Operators 26, 81, 116*
Drafting 3, 7*, 122*, 124
DRILLING
Heads 27, 35, 103*
Bushings 83, 99
Jigs 16
Machines 11, 72*, 83*, 114
Tools 11, 29, 44

DRIVES
Adjustable Speed 10, 13
Components 2*, 3, 5, 7, 20*, 20, 23, 32, 34, 45, 52, 53*, 53, 58, 67, 83*, 84, 94, 107, 108
Speed Reducer 11, 18, 28, 34, 43, 46, 49, 71*, 79, 111
Variable Speed 26, 53, 64, 118
Drying 20, 52, 54, 63, 75, 84*, 86, 99*, 117
DUCT, Electric 105*
Ventilating 58
Dust Collecting 7, 9, 14, 23, 55, 78, 84*, 94, 104*, 118
Dynamometers 84*

ELECTRICAL PRODUCTS 113
Electronic Products 25, 34*, 48*, 92*
Elevators 29, 35*, 39, 45, 54, 72*, 73, 76, 80, 84*, 104, 114, 120*, 123*
Engineering 20*
Engraving 91
Equivalents 46
Etching 42*, 125*
EXPANDING 30*, 84*
Expositions, Industrial 50*
Exterminating 14*, 89
Extinguishing 2, 20, 84*, 107*
Extracting 49, 56

FABRICATING 32, 52, 84*
Fabrics 61, 78, 84*, 93*
Fans & Blowers 11, 40, 49, 51, 67*, 92, 95, 128
Fastening Equipment 30*, 90, 124, 125*
Fastenings 9, 12, 16, 18, 21, 25*, 33, 40, 45*, 46, 47, 65, 68, 70, 75, 77*, 82, 87, 96, 97, 110, 119, 120, 121, 123
Faucet Repair Parts 12
Feeding 19, 27*, 28, 37, 39, 71, 77
Fence 73, 108
Filing 100, 107*
Filling 17*, 94
FILTERING, Air 4, 63, 73, 95*
Liquid 31, 42*, 84*, 92, 93*, 116
Flexible Shaft Equipment 44*
Floats 80
Flock 9
Floors 29, 37, 42, 47*, 60*, 60, 65, 74, 96, 97, 101, 114, 120*, 126, 128
Forging 56*
Forming 10, 21*
Foundry Equipment 84*
FURNACES 7, 10*, 24, 27, 62, 84*
Furniture 10*, 26, 43, 101*, 117*
Fuses 8, 17

GAGES
Dimensional 15*, 21*, 24, 34, 43, 47, 91*, 101, 104*, 105*, 110, 115
Electronic 92*
Level 111*
Liquid Level 27
Pressure 103
Surface Roughness 29, 121
Tension 103

Reader Service Form 16, 112
Useful Information 20
New Literature 82
Ideas For You 64
Index to Advertisers 126
"I Wish I Had" 128

Gaskets 56, 64*, 82, 85*, 126
Gear Cutting 33
Gears 20, 94
GENERATORS, Electric 54*, 99
Steam 34, 65
Glare Proofing 84
Glass 13, 71
Gloves 15, 60, 102
Glove Reconditioning 26
Goggles 40*, 109
Grabs 69, 90
Grating, Floor 74, 97
GRINDING
Attachments 85*
Belts 73
Heads 90
Machines 16, 22*, 30, 31*, 32, 33*
Tools 29, 42, 44, 66, 83, 98, 99, 100*, 100, 128
Wheels 20, 21*, 41, 68, 78, 107, 121
Wheel Dressers 54
Guides, Band Saw 8

HAMMERS 28, 41*, 61, 64*, 86
Handles 45, 59, 79*
Handling 8, 12*, 18, 27, 30, 35, 37, 41*, 45, 47, 64, 69, 80*, 81, 85*, 85, 90, 95, 97
Handwheels 45
Hardboard 18*, 22
HEADS, Drill 27, 35, 103*
Tapping 122*
Heat Treating 7, 24, 62, 85*
HEATING Elements 5, 11, 21, 28, 41, 52*, 55*, 55, 71, 85*, 86, 89, 93, 96*, 109*, 124
Flame 125
High Frequency 27, 90*, 97, 109*
Liquid 49*
Process 27*, 81*
Space 22, 40, 57, 85, 89
Helmets 14, 108*
Hoists 23*, 41, 45, 51, 85*, 98, 115
Honing 85*
Hoppers 41*, 97
HOSE 85*, 104
Fittings 18, 44, 55*, 82*, 109*
Metal 10, 16, 49, 73, 85*
INDEXING 54, 61, 94*, 118*, 123*
Ink 17
Inserts, Thread 75
INSULATING, Electric 33*, 44, 85*, 86
Shock 79*
Sound 102*
Thermal 51, 55*, 85*
Interlocks 118
Isolating, Vibration 12, 58*, 85*, 92

(Continued Over)

FOR ROUTING to others in your plant interested in product information

- ☐ *Plant Operating, Mr.* _____
- ☐ *Production, Mr.* _____
- ☐ *Engineering, Mr.* _____
- ☐ *Product Design, Mr.* _____
- ☐ *Purchasing, Mr.* _____
- ☐ _____

JACKS 2, 7, 35, 37, 105, 106
JOINTS, Pipe ..3*, 26, 58, 72, 84, 87
Shaft 5, 108

KEYSEATING 57, 98

LABELS 11, 24, 116*
Ladders 30, 42, 44*, 59, 113
Laminates 53, 57, 89, 94
Lamps 30*, 52
Lapping 86*, 87, 91, 114*
Latches 45*
LATHES 119, 121*
Attachments 37, 123
Tools 59*
Layout 37, 45, 93*, 121*
Lighting ..23, 29*, 30*, 38*, 52, 56*, 59, 74*, 86*, 114*, 120*
Loading 37
Lockers 115
Locknuts 21, 70, 77*, 87, 119
Lockwashers 18
LUBRICATING Equipment 6, 11*, 47*, 51, 61, 63, 86*, 86, 103*, 118
Materials 3, 4, 64*, 81*, 86*, 97, 98*, 111*

MACHINE PARTS 79*
Machining 3*, 123
Magnets 9, 56, 65*, 72, 77, 128
Magnifying 59, 121*
Management 22*, 106*
Mandrels, Expanding 7
Manufacturing 14
MARKING Machines 42, 56*, 64, 91
Materials 11, 17, 24, 96*, 100, 116*, 127
Tools 5, 10, 42*, 125*
Masking 105
Matrix Materials 22
Mats, Floor 42, 120*
Melting 10*, 27, 31, 55*, 63*
METAL Data 3
Design Strengthened 8
Expanded 72
Laminated 53
Parts 9, 14, 35, 56, 61, 103
Perforated 70
Powders 60*
Prefinished 8*, 24
Shapes 86*
Metal Treating 48, 66, 86*
METERS, Electric ..49, 86*, 111, 120
Electronic 78*
Flow 43*
Liquid 112
Microfilm Equipment 119
Microscopes 24
MILLING Bushings 109*
Cutters 36, 65, 83, 102*
Machines 75*, 88
Mixing 58*, 66*
Molybdenum 4
Monorail 6
MOTORS
Brushes 86*
Brush Holders 110
Control 12
Electric 18, 24*, 28, 86*, 102*, 111, 112, 113, 116, 118, 119*
Pneumatic 89
Mowing 36, 80
Mufflers 117*

MAILING 74*, 77
Nameplates 24, 34, 86*, 117
Nozzles 23
Numbering 64
Nuts 33, 65, 120

OSCILLOSCOPES 62
Ovens 54, 55, 81*, 86*

PACKAGING
Containers 18, 58*, 65*, 77
Equipment 17*, 52, 77, 86*, 94, 99
Materials 7*, 79, 84, 116
Packings 20, 49
PAINTING Equipment 18*, 49*, 55*, 55, 59*, 86*, 92, 106
Materials 51*, 52, 92, 99*
Pencils 3, 124
Pins 18, 97
PIPE 2*, 24*, 61, 100*, 123
Coils 21, 93, 96*
Finned 89
Fittings 3*, 26, 27*, 32, 58, 72*, 84, 87, 125
Plant Sites 24*
PLASTIC Fabricating 100
Materials 24*, 26*, 40*, 57, 72, 81, 87*, 116, 120
Plastic Products 2*, 18, 70*, 73*, 100*, 123
PLATES, Floor 29, 65
Surface 45
Plating 25, 54*, 61*
PLYWOOD 89
Metal Faced 94
Polishing 16, 66, 72, 87*
PRESSES
Attachments 19, 37, 77
Hand 91
Hydraulic 14*
Mechanical 34, 71*
Pneumatic 98
Tools 26*, 40*, 76, 87*, 106*, 116*
PRINTING Equipment 26, 47*, 66, 75, 85, 102, 125
Materials 31*, 67
Processing 20, 87*
Projecting 34*, 53, 59, 108*
Protecting ..3, 5*, 6*, 14, 15, 17, 21, 26, 27, 40*, 40, 60, 87*, 102, 103*, 108*, 109, 121
Publications 50*, 126
Pulleys 67
Pulling 2, 26, 35
Pulverizing 26, 104
PUMPS
Centrifugal 18, 24, 57, 60*, 61, 76, 82, 85, 94*, 106*, 107, 110, 117
Coolant 6
Hydraulic 62*, 63*, 102, 109, 118*
Metering 65, 71
Pneumatic 48, 57*, 59, 74
Rotary 18, 126
Turbine 17, 18
Vacuum 14, 20, 26*
Punching 12, 76, 91, 106*
PYROMETERS 16, 42, 71
Supplies 16, 87*

RACKS 30, 95, 98, 100, 115
Ramps 54, 101, 114, 123*
Record Keeping 100*, 104, 108*, 119
Recorders, Production 74, 77*
Rectifying 44
Reducers, Speed 11, 34, 43, 46, 49, 71, 79
Reeling 64
Reels 8, 47
Refractories 79, 109
Refrigerating 51*
REGISTER, MANUFACTURERS' 50*
Relays 15, 40, 43*, 45*, 51*, 87*, 88, 90*, 96, 98*, 123
Resistors 11, 54*, 87*
Respirators 27, 103*
Retrieving 8, 47
Rheostats 60, 76*, 123*
RINGS, Metal 56
Piston 9*
Retaining 70
Riveting 12, 31*
Rivets 12, 33, 46, 65, 96
Rock Drilling 25
Rolls, Machine 57
Roofs 46*, 127
Rope 32*
Rubber Products 15, 62, 68, 87*

SANDING 30, 41, 66, 84, 112*, 121*, 121
Sapphire, Synthetic 6
SAWING, Blades 26*, 66
Machines 19, 31, 74, 88*, 88, 103
Machine Parts 8
Tools 1*, 75
Scaffolds 32, 38, 83, 113
Scales 15*, 68, 90, 95
Scoops 18
Screen 91*
Screw Driving 48, 86
Screws 9, 16, 33, 65, 68, 82, 110, 120, 123
SEALING Components 9*, 49, 62*, 64*, 82, 87, 88*, 97, 106, 120, 126
Equipment 23*, 52, 88*
Materials 20, 23*, 29, 56, 58, 69, 95*
Service 100
Separating 3, 4, 10, 48*, 63, 88*, 90, 116
Sewing 99
Shafts, Flexible 67, 83
Shearing 12, 39*, 56, 67*, 69, 77, 80*, 111
Sheaves 64
Shelving 112
Shields, Face 14
SHIM STOCK 50
Signaling 5, 7*, 32*, 70*, 77*, 114
Signs 8
Skids 8, 12*, 16, 27, 45
Slip Proofing 60
Slitting 66, 69, 111
SOLDERING Equipment 23, 88*
Materials 41, 49*, 105*, 112*, 128
Solenoids 5, 88*
Spraying 21, 23, 53, 92, 109
Springs 124*
Sprockets 3, 32
Stampings 8, 9, 50
STAPLING 43, 67, 103*, 117, 123
Starters, Fluorescent 59, 114*
Steels 6, 19, 28, 33, 38*, 60*, 79
Storing 4, 19, 28*, 30, 54*, 64, 95, 98, 99*, 100*, 100, 112, 115
Strapping 35*, 64, 73*, 88*, 90*, 95*, 101, 102
Striping 64
Stripping 6*, 59*, 89
STROBOSCOPES 70
Stud Driving 90, 91, 124
Surplus 4
Switches ..17, 25, 36*, 36, 39*, 44, 53, 70, 73*, 81*, 88*, 109*, 110*, 113, 119*

TABLES 10, 43
Machine 21
Tachometers 18*, 76, 93, 113
Tackers 67, 117
Tanks 4, 28*, 66
Tapes 7*, 35*, 43, 79, 86, 91*, 100, 102, 105, 127
TAPPING Machines 31
Tools 67
Telephones 52*, 55, 115*
Telescopes, Industrial 124
Television, Industrial 77*
TESTING
Abrasion 78
Electric 88*, 93*, 95*, 111*, 111, 112*, 114*, 120*
Electronic 22*, 28*, 45*, 62, 66*, 88*, 94*
Flow 55*, 119*
Gas 16*, 37*, 76*
Hardness 13*, 69, 78, 110*
Laboratory 28*
Performance 54*, 70*, 88*, 106, 115* 118*
Petroleum 127
Smoke Density 101
Stiffness 78
Temperature 38*
Tension 102
Thermocouples 16
Thermometers 78*, 88*, 103, 128
Thermostats 33, 48, 107
THREADING Attachments 41*
Guides 88*
Heads 122*
Machines 31, 89*, 95
Tools 67, 89*, 115
Timing 24, 32*, 40, 43*, 57*, 72*, 90*, 96, 100, 111, 117*, 123
Tires 25, 38, 99
Torches 125
Track 12
Tractors 36, 76*, 80, 89*
Trailers 16, 25*, 122
Tramrail 47
TRANSFERS, Ball 7
Decal 117
Transformers 43, 51
Traps 4, 15, 22, 34*, 63
TRUCKS
Attachments 37, 39*, 63*
Hand ..8, 14, 16, 45, 51, 89*, 108
Hand Lift 111
Parts 124*
Power Lift 13, 23, 25, 40*, 56, 60, 74*, 91, 92, 108
Power Units 99
Tractor 36, 76*, 80, 89*
Trailer 16, 25*, 122
TUBES 89*, 93
Finned 41
Flexible 10, 16, 49, 73*, 73, 124*
Tools 97
Tumbling 62, 98*

UNIONS, Pipe 32, 125

VALVES
Blow 51
Jacketed 89*
Line 4, 28, 31, 36, 45, 48, 88, 105, 107
Operating 19, 29*, 31, 39, 44, 62, 73*, 124*, 127
Operators 30
Power Operated 6, 7, 8*, 70, 115*
Regulating 19*, 32, 37*, 39, 42, 55, 77, 87, 91, 97, 103, 107, 110, 117
Relief 30
Repair Parts 12
Ventilating 40, 51, 55, 58, 67*, 92, 95, 104
Vibrating 39*, 74
Vises 9, 27*, 28, 54, 120

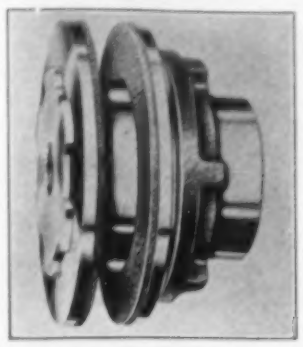
WASHERS 65, 120
Washrooms 46, 82, 99*
Watchclocks 68, 72*
Water Proofing 125
Water Treating 13, 28*, 53
Weighing 15*, 68, 89*, 90, 95
WELDING
Arc 52*, 79, 89*, 105, 117
Curtains 3
Materials 22*, 23*, 30*, 36, 58, 63, 89*, 124*
Positioners 19
Wheels 16, 25, 34, 108
Winding 111, 120
WIRE, Electric 89*
Magnet 13, 69*
Parts 50
Wire Cloth 13, 80
WIRE ROPE 28*
Fittings 46, 76
Slings 85
Wood Working 31, 89*
Wrenches 10, 46, 48, 113, 119

X-RAY Equipment 89*

If you write maker identify as **IEN - 3653**

DRIVE . . Friction disc clutch limits torque for overload protection

Source: MORSE CHAIN CO.
7601 Central Ave., Dept. IEN, Detroit 10, Mich.



Replaces shear pin

A sprocket, V-belt sheave, or gear, rides a powdered metal bushing between two plate backed friction rings in this new Torque Limiter clutch. The plates ride splines on the shaft on the two sides of the bushing. One is backed up solidly. The other is backed by a Belleville spring and an adjusting nut that threads on the hub. This nut sets up to establish a desired torque rating. Beyond this point, slipping occurs between the friction rings and the driven member and the torque is ⅓ to ½ the original setting.

Rotation continues in the driving member. The driven sprocket, sheave or gear remains stationary until the drive is shut off and the overload condition has been corrected. Signaling devices can be included. The drive can be restarted as soon as the overload is removed without need for further adjustment.

Eleven sizes in the line rate 20 to 620 foot pounds. Plate diameters are 3 to 10 inches. Hub length is 2 to about 4 inches. Bore ranges from ½ to 2½ inches. The company is prepared to supply its standard Type-A plain plate roller chain sprocket in ½ to 1¼ in. pitch to specification. Spacers are provided to permit the use of standard sprockets of various thicknesses.

If you write maker identify as **IEN - 3654**

PIPE . . Extruded plastic, semi-rigid and flexible, 2 to 6 inches

Source: REPUBLIC STEEL CORP.
3140 E. 45th St., Dept. IEN, Cleveland 27, Ohio

Bulletin

"Plastic Pipe"

The company announces production of extruded plastic pipe, in both semi-rigid cellulose acetate butyrate and flexible polyethylene to supplement its lines of steel pipe. Both new types are available in ½ to 6-in. sizes. The line includes fittings and adapters, the latter to join plastic and metal pipe in a given installation. Both types are supplied with a non-toxic black pigment for resistance to attack by ultraviolet rays in exposed installations.

Type B, semi-rigid, rates 140 to 65 lb. per sq. in. in recommended working pressure at 120 deg. F. in the ½ to 6-in. size range. It is suited for temperatures to 160 deg. F. It is normally supplied in 20 and 40-ft. straight lengths with the ½, ¾ and 1-in. sizes also available in coils. It can be cut to length with a saw. It is joined with slip fittings, thinner and weld solutions supplied for this purpose. It is non-toxic, corrosion proof, smooth wall. It will carry fluids, gases, including oils, salt water, gasoline, certain acids.

Type E, flexible, rates 65 to 20 lb. in recommended working pressure at 120 deg. F., this temperature being the highest for which the pipe is listed. It is supplied in coils measuring 400 to 100 ft. in sizes from ½ to 3 inches. The 4 and 6-in. sizes are in 25-ft. straight lengths. It can be cut with a saw or knife and is joined with clamp fittings. It is non-toxic, is not damaged by freezing water, will handle corrosive fluids and gases. It is suited for food products where steam sterilization is not required.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3655**

For quickly and easily pulling bearings, bushings, and liners on electric motors

. . . use the Duff-Norton remote controlled "Lo-Hite" Hydraulic Jack with detached independent pump. The ram when closed is only 4½ inches high, yet can safely move 30 tons 2 inches in any direction. The independent pumping mechanism is connected to the jacking ram by an 8-foot flexible rubber hose. Safe, sturdy, precision-built for trouble-free service, the "Lo-Hite" is winning new users everywhere.

Ask your local distributor for the "Lo-Hite" (No. 30-H-4.5), or write the world's oldest and largest manufacturer of lifting jacks for Bulletin AD-32-M and name of the nearest distributor—The Duff-Norton Manufacturing Company, P. O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS

"Giving Industry a Lift Since 1883"

If you write maker identify as **IEN - 3656**

every salesman an engineer

When design calls for **ball** bearings, call in your New Departure sales *engineer*. He's a specialist in solving anti-friction problems. He is backed by complete research and manufacturing facilities.

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

If you write maker identify as **IEN - 3657**

Once it gets a foothold, fire rips into your plant like a monstrous claw. That means you must guard every hazard—flammable liquids, electrical equipment as well as ordinary combustibles—with Kidde Portable Extinguishers or Built-in Systems. Call your Kidde agent today.

Kidde

Walter Kidde & Company, Inc.
436 Main St., Belleville 9, N. J.

If you write maker identify as **IEN - 3658**

...of cutting production costs!

How does this simple act of *preplacing* a ring of EASY-FLO low-temperature silver brazing alloy cut production costs?

It's the key factor in a method of joining metals that reduces brazing to push-button simplicity and assures a steady stream of soundly brazed parts — with easily trained labor doing the whole job.

Will preplacing cut your production costs?

Without obligation one of our field engineers will look over your metal joining work and give you the answer. Just write and say when.

At the ASTE TOOL SHOW, Philadelphia
SEE the **preplacement** method in action on an actual production brazing setup. Also many other examples of silver brazing. Talk over your metal joining problems with our brazing engineers.
BOOTH 613

For the full facts in print, write for a copy of Bulletin 20

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

If you write maker identify as IEN - 3659

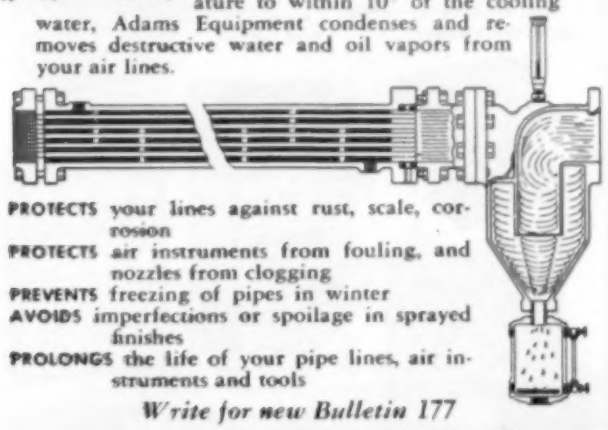
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with **ADAMS Aftercooler and Cyclone Separator**

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

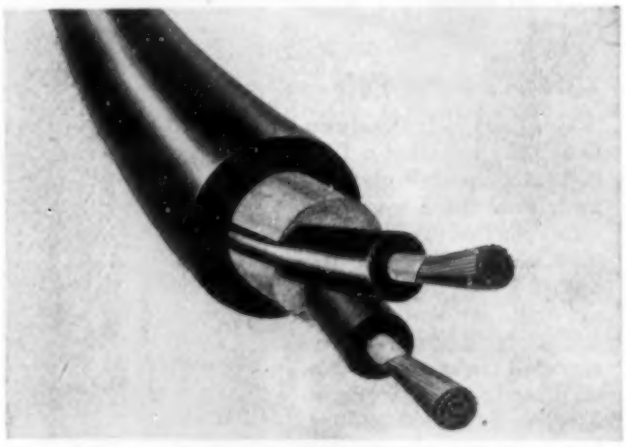
Write for new Bulletin 177

R.P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 3660

PORTABLE CORD

Neoprene-jacketed Securityflex takes abuse, won't kink, flexes indefinitely



Securityflex* is available as a heavy duty portable cord of one to six conductors, or as a lightweight cord for small tools and lamps. Tough, dense neoprene jacket resists flame, heat, sunlight, aging, ozone, oils, solvents, chemicals and acids . . . protects against cutting, abrasion and crushing. It's so rugged it's used on mine drills! Securityflex delivers safe, adequate power . . . stands up under the toughest conditions. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

*Trademark

ANACONDA® today's headquarters for wire and cable

If you write maker identify as IEN - 3661

Browning SPROCKETS

OFF-THE-SHELF
READY-FOR-USE
A Time and Money Saver with

Split Taper Compression Bushings
• NO REBORING
• NO WELDING

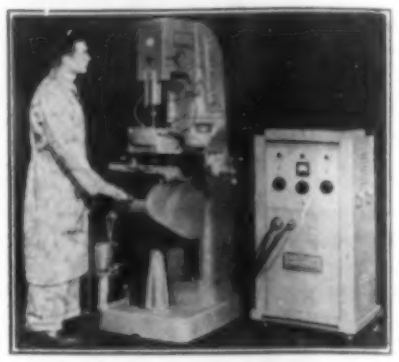
Write for Catalog CD 101.
There's a Browning Distributor near you.

BROWNING MANUFACTURING COMPANY MAYSVILLE · · · KENTUCKY

If you write maker identify as IEN - 3662

MACHINING . . Ultrasonic vibrator employs abrasive to cut hard materials

Source: SHEFFIELD CORPORATION
721 Springfield Ave., Dept. IEN, Dayton 1, Ohio



To 30,000 cps.

Trail Blazer designates this first production model of the company's ultrasonic Cavitron machine, previously announced in custom production IEN-13268-53. As in the original design, an ultrasonic generator and transducer "vibrate" intricate shapes in materials such as glass, tungsten carbide, hardened steel, precious stones.

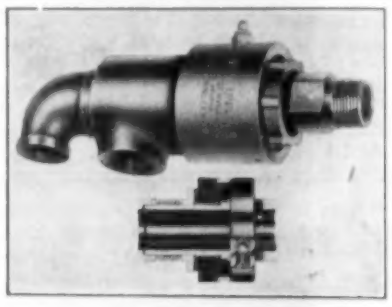
The machine employs an inexpensive tool material, such as soft steel, in a head that vibrates at 18,000 to 30,000 cps. while a pump provides continuous flow of abrasive grit in suspension over the work surface. Extremely fine finishes are obtained without chemical or physical change in the work.

Holes as small as 0.012 in. in diameter or slots of that width can be produced quickly in the hardest materials. Blind, through, tapered or curved holes of any desired shape and depth can be cut. Dies can be engraved, keyways and oil holes cut, serrated root forms of jet turbine blades can be machined with high repetitive accuracy.

If you write maker identify as IEN - 3663

PIPE FITTING . . Rotary joint to make stationary-rotating connection

Source: PERFECTING SERVICE CO.
332 Atando Ave., Dept. IEN, Charlotte 6, N. C.



Bulletin 700

Type S, with double pipe connections for syphon duty, as shown in the illustration, and Type P, with a single connection, are new designs in the company's ball bearing Rotary Union. The design supplements the original sealed assembly. It permits maintenance in the field after removal of the union nut that threads into the stationary body to retain the inner sealed rotating member.

The joint is available in ¼ to 2-in. pipe sizes for use on steam, water, air, gas or oil to 250-lb. pressure. It makes a continuous connection between a stationary supply line and a revolving machine cylinder, roll or drum. The syphon connection permits removal of condensate from the interior of the drum through the second stationary connection.

The rotating member is a unit assembly consisting of the hollow spindle, a sealing flange backed by a metal bellows, a composition sealing member, a lubricant retainer ring and a single or double row ball bearing. This unit is contained within the housing where it is sealed with a gasket upon threading in and tightening the union nut.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3664

SAFETY EQUIPMENT FOR ALL INDUSTRIES

COVERS THE DANGER AREA

IPCO WELDING CURTAINS

Workers and passers-by are protected from harmful rays given off by welding operations. Also serve as a protective shield against flying chips and scale. Made of special flameproof and waterproof canvas—or asbestos—complete with eyelets for suspending on rod or pipe support.

WRITE FOR BULLETIN NO. 26

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 3665

LUBRICATION ECONOMY

"THIS LUBRICANT reduces Service Calls!"

The sales director of the Lynch Corporation, manufacturers of the MORPAC forming and wrapping machine, writes us: *"Our Service Engineers can readily spot machines that have had other than LUBRIPLATE Lubrication, as these machines do not give the service they should."*

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

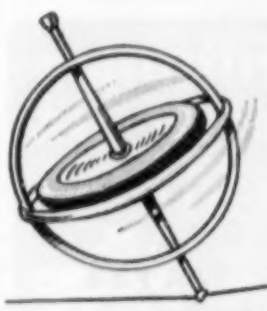
LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 3666

CASTELL push button LOCKTITE lead holder has PERFECT BALANCE



Perfect balance makes Push Button CASTELL LOCKTITE Holder the king of its class.

Exclusive collet holds lead in **bull dog grip,** preventing slipping or turning.

No graphite dust stains your fingers —because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

Equipped with easily-replaced clutch, giving your LOCKTITE indefinite life.

Imported CASTELL 9030 Lead inserted in your LOCKTITE Holder gives you the combination for brilliant results on your drawing board. Ask your Dealer for both — LOCKTITE Holder and Imported CASTELL 9030 Lead in 19 degrees, 7B to 10H.

AW FABER-CASTELL PENCIL COMPANY, INC., NEWARK 3, N. J.

If you write maker identify as IEN - 3667

The Metals Handbook

1332 Large pages
1752 Illustrations
1057 Tables
803 Articles
1,620,000 Words
40,000 Copies in use

Here is a book without a competitor . . . a book 25 years in the making. The current, 7th edition of the Metals Handbook was compiled and written by 68 committees of the American Society for Metals; more than 500 metals engineers were hand picked by the Society as the top experts, the men best qualified to write the most authoritative possible reference book on metals, metal properties, fabrication and uses. The book they wrote is the Metals Handbook. It is divided into 37 principal sections, and contains 803 separate articles and data sheets on metals, metal shaping, forming, heat treating, welding, machining, foundry work, cleaning, finishing, testing, inspection, control and research techniques. All metals, all processes are included. The 64-page index and 4-page section on how to use the book make it easy for any reader to find what he wants. Over 40,000 copies of this edition are now in use by engineers, production men, executives, purchasing agents and others. Order your copy today by returning the coupon below. Price is $15.00.

American Society for Metals, Room 709
7339 Euclid Ave., Cleveland 3, Ohio

Rush me a copy of the Metals Handbook.

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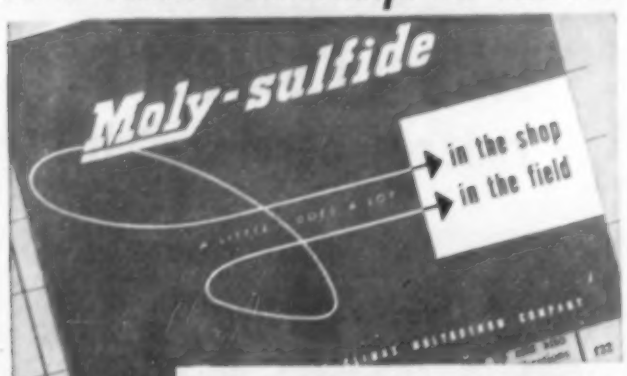
City ..... Zone ..... State .....

☐ $15.00 enclosed ☐ Bill me

If you write maker identify as IEN - 3668

154 ideas on ways to use...



154 varied applications of molybdenum sulfide in the shop and in the field are described in a new booklet now available. This solid-film lubricant has demonstrated unique anti-friction properties under conditions of extreme pressure, high velocity, elevated temperature, or chemical attack.

The 40-page booklet contains the records of solved lubrication problems—some might solve your own. Write now on your business letterhead for this booklet.

Moly-sulfide
A LITTLE DOES A LOT

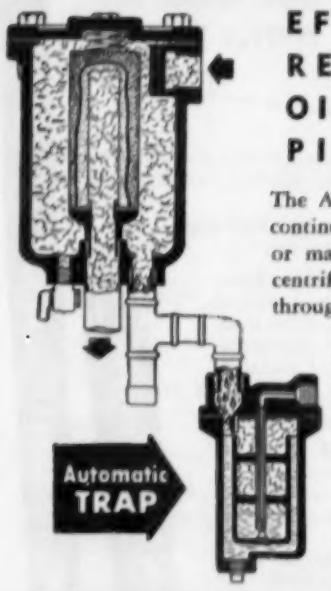
The lubricant for extreme conditions

MS-6A

Climax Molybdenum Company
500 Fifth Avenue, New York City 36, N.Y.

If you write maker identify as IEN - 3669

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operations.

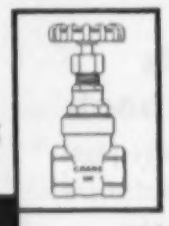
Write for complete data Bulletin 177

R. P. ADAMS CO., Inc.
219 E. Park Drive, Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN - 3670

NEW
BRASS GATE VALVES

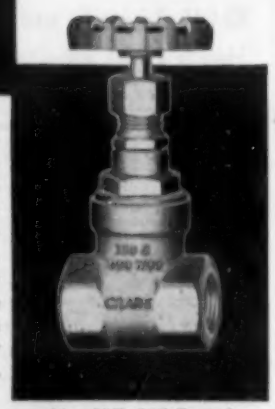


No. 410
100-Pound

No. 438
125-Pound

Complete facts, including sizes, prices and dimensions in new four-page Folder AD1944 just off the press. Send for yours today, or ask your Crane Representative.

BY CRANE



Meet your new brass valve favorites—the modern, streamlined version of the familiar Crane 410, 437, and 438 valves that have served so well so long. Note in particular the cylindrical design of the upper body . . . the same basic shape as in high-pressure steel valves. That's the kind of refinement that makes this famous valve series *more than ever* your best buy. Sizes 1/4 to 3 in. depending on pressure class.

No. 437, 150-Pound

CRANE VALVES

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Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

Industrial Equipment News

PUBLISHED BY THOMAS PUBLISHING COMPANY

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BPA NBP

VOL. 22 APRIL, 1954 No. 4

Editing the News

Five years ago, with some 40,000 new product descriptions as our experience background, we wrote the following—"Introducing new products and promoting the use of industrial facilities and services is a business dealing in 'things to do things with.' It is the outcome of industrial mechanization which applies to inanimate things for a multitude of product and production purposes. The fact that the things themselves are inanimate makes it necessary to explain them to their users for best selection, installation, operation, replacement."

We assembled a set of questions, as a guide for the manufacturers and ourselves, to "outline" our new product descriptions and to help in selection of pictures, knowing that pictures can be the most important part of any product description. We distributed a form containing the questions, explanations and suggestions on each. We selected examples of illustrations, including photographs, simplified sections and schematic layouts, to show where each could apply to advantage. We have a good example of both illustration and description to show you on the next page of this issue in IEN-3677.

An advertising agency sent us the news release with the customary photographs showing an external view of this new pneumatic transmitter. The release might have been like many others except for two notes that appeared at the bottom of the release. One note gave us the name of the individual to contact at the company if we needed further information. The other directed us to "feel free to use any drawings in the catalog."

The photograph showing the external view is reproduced here. You will be seeing it as the sole supporting illustration in many releases that doubtless will appear on this interesting and important new "control" product. The illustration that we chose to employ in IEN's description combines the simplified sectional view of the flange mounted diaphragm-equipped transmitter and a combination schematic layout showing application of the transmitter on a vented tank and on a tank that operates under pressure. IEN's accompanying description employs the letters we added to the illustration to explain the sectional view and to make reasonably complete, for the experienced reader, the basic operating, construction and limiting specifications.

We were able to write the description and to illustrate it as we did because we had the assistance of an agency that appreciates the value of reasonably complete information and the support of a manufacturer willing to show basic details of the new product he has developed for use in industry. More power to both.

W. E. Irish.

If you write maker identify as IEN - 3671

750 DIFFERENT CABINET COMBINATIONS

Available for Small Parts Storage, Handling or Display. A Type and Size for Every Need.

We can supply you the perfect cabinet for your particular requirements. 750 different combinations can be CUSTOM - BUILT at production line prices. Free catalog upon request.

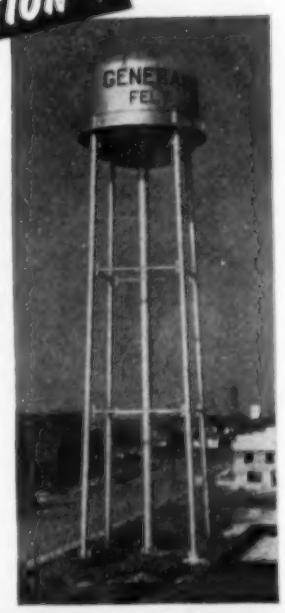
AKRO-MILS, INC. Box 989-N AKRON 9, OHIO

If you write maker identify as IEN - 3672

TRIPLE FIRE PROTECTION

for General Felt

General Felt Products Company installed a 100,000-gal. Horton® elevated tank as a third source of water for fire protection at its Chicago Heights, Ill., plant. The other sources are the City water mains and a fire pump. Horton elevated tanks are built in standard capacities from 5,000 to 3,000,000 gallons. For estimates, please write our nearest office, stating capacity, height to bottom, location and type of insurance carried.



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Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 3673

SAVE UP TO 85% ON GOVERNMENT SURPLUS

If you write maker identify as IEN - 3674

What FEATURES do YOU WANT in a UNIVERSAL JOINT?

- Maximum strength and bearing surface
- Quick-acting, dependable response
- Long service-life
- Optimum operating angle
- Close quarter operation
- Accurate surface grinding
- High concentricity
- Minimum weight

LOVEJOY HAS THEM ALL!

Available in 13 standard sizes — diameters ½" to 4" — bore ¼" to 2" — lengths 2" to 10⅝"

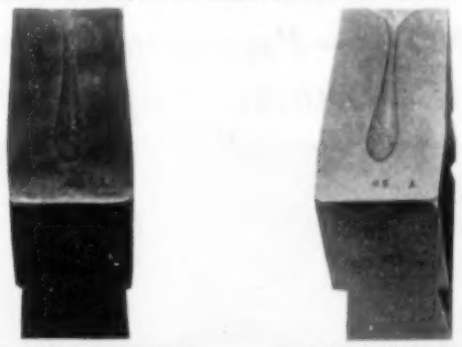
WRITE NOW FOR CATALOG AND PRICES

LOVEJOY FLEXIBLE COUPLING CO.

Manufacturers of flexible couplings, universal joints, variable speed pulleys and variable speed transmissions.

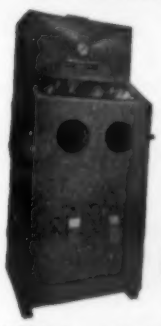
4814 W. LAKE STREET CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 3675



BEFORE PRESSURE BLASTING AFTER PRESSURE BLASTING

FINISH DIES and MOLDS . . . Reduce hand Polishing Time!



ONLY PRESSURE BLAST GIVES YOU 2-SPEED WET-BLASTING

FREE . . . Learn what PRESSURE BLAST can do for you! Die and Mold Polishing, Blending Grind Lines, Deburring, Heat Treat Scale Removal, Honing of Cutting Tools, Pre-plating Cleaning . . . Hundreds of proven, money-saving applications!

Write for our new 8 page fully illustrated Booklet . . . or send samples of work you want tested to:

MODEL A . . . ONE OF 4 STANDARD UNITS. CUSTOM MACHINES DESIGNED TO FIT SPECIAL REQUIREMENTS.

The PRO-BLAST Company, Incorporated

747-3 Windsor Street
Hartford 5, Conn.

If you write maker identify as IEN - 3676

Amazing FLASH BOX OPENER

Opens Any Carton Quicker . . . Cleaner

Exclusive patented blade holder adjustable to varying thicknesses of carton covers.

THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:

Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

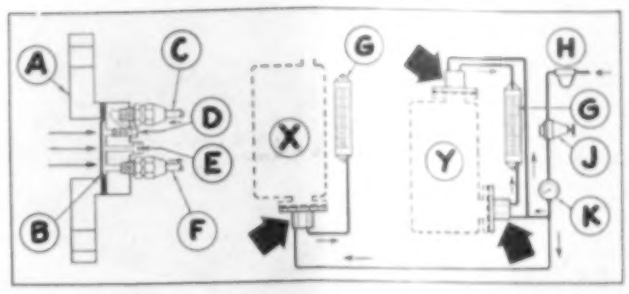
Retail Price $1.75

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN - 3677

CONTROL . . Pneumatic transmitter to measure pressure of liquids, gases

Source: KING ENGINEERING CORP.
Box 540, Dept. IEN, Ann Arbor, Mich.



Transmitter Vented Tank Pressurized Tank

Model 6100F is a new transmitter, for use with air-operated instruments, to measure the pressure of liquids and gases or the depth, weight or volume of liquids in vented and pressurized containers. It provides a positive seal between the gaging equipment and the fluid measured. It can be used with any fluid, including those that are dangerous or difficult to measure. Accurate readings can be made at pressures to 20 lb. per sq. in. in vented tanks and 45 lb. in pressurized tanks. The transmitter withstands over-pressure to 250 lb. without damage. Air consumption is under 2 cfh.

The transmitter is assembled in a mounting flange A. It includes a diaphragm B on which fluid pressure applies from inside a tank, a supply connection C for the balancing pressure, a snubber screw D to control rate for balancing pressure flow, a vent E and a connection F leading to the indicating gage G, or other air operated instruments. One transmitter assembly is required for a vented tank as at X. Two are employed on a pressurized tank as at Y, the second one to cancel out the tank pressure above the fluid.

In both installations the balancing air enters through a line carrying a filter H, a regulating valve J and a pressure gage K. The transmitter is normally in equilibrium, with the fluid on one side of the diaphragm balanced by the air pressure on the opposite side. Under this condition, the air pressure within the transmitter is the same as the fluid pressure and so can provide the gage or control reading.

The diaphragm is momentarily moved closer to the venting orifice when fluid pressure increases. This restricts the outflow of air so pressure inside the diaphragm builds up until it is the same as the fluid pressure. When fluid pressure is decreased, the air pressure on the inner side momentarily forces the diaphragm away from the venting orifice. Then the air pressure decreases until it equals the fluid pressure.

The transmitter body is made of brass. The diaphragm and clamping ring are 18-8 stainless steel. The assembly is equipped with a 3-in. 125-lb. cast iron flange or with a 3-in. stainless steel flange. Any direct reading pressure indicator or recorder can be used to indicate or record pressure changes.

If you write maker identify as IEN - 3678

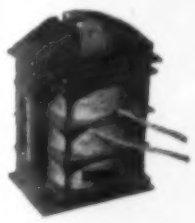
Shoe Saver is a new silicone based water repellent for application on shoes and articles made of leather. It is a clear colorless fluid. It coats the individual leather fibres but does not seal the pores so the leather can "breathe." Air is let in but water, oil and other liquids are kept out. One application will last the life of the leather. The liquid also improves resistance to scuffing and heat, keeps the leather pliable and soft. Application is with a soft cloth or swab. A 4-oz. bottle contains enough for two pairs of shoes and lists at 60 cents. Pint cans list at $2, gallons at $12.75. Dow Corning Corp., Box 592, Dept. IEN, Midland, Mich, is the manufacturer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3679

SOLENOIDS

A-128 solenoid; 18 lbs. at 85% voltage; 3" stroke.



AS-427 solenoid; 14 lbs. at 85% voltage; 2.5" stroke; 600 strokes per minute.

A-100 line of pure D.C. solenoids without cut-out switch; ranging from 1.5 lbs. to 100 lbs.

AS-400 line of high speed solenoids; ranging from 1.5 lbs. to 14.0 lbs. Speed up to 600 strokes per minute.

We recommend that you get acquainted with these two lines of solenoids. They can do things for you that you never thought could be done.

We make 44 other standard lines of solenoids. Also solenoid brakes up to 24,000 ft-lbs. torque capacity.

See our catalogs in Sweet's Catalog Service. Ask for more information.

TROMBETTA SOLENOID CORP.
329 N. MILWAUKEE STREET • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 3680

CHROMALOX Strip Heaters

EFFICIENT • DEPENDABLE • LOW COST

Electric Heat FOR PRODUCTS AND PROCESSES

Easy-to-install CHROMALOX Electric Strip Heaters give clean, dependable and accurately controlled heat. They are widely used in platens, dies, kettles, tanks, ovens, air ducts and other applications requiring accurate temperature control and around-the-clock service.

In straight lengths, curves, rings, segments; with iron, steel and alloy sheaths.

WANT MORE FACTS?

. . . Send for the free booklet "100 Ways to Apply Electric Heat". It has many ideas you can adapt for use in your plant

EDWIN L. WIEGAND CO., 7505 THOMAS BOULEVARD, PITTSBURGH 8, PA.

See Chromalox Electric Heaters Advertisement, Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 3681

Here's the marking tool

INSPECTORS LIKE

. . . for fast—safe inspection stamping!

★ EASY TO USE
★ EASY TO CARRY
★ EASY TO CHANGE
★ STURDY — SAFE

INSERT STYLE
MODEL IH-30

INSPECTOR'S HAMMER

Inspectors like this hammer because it's so well balanced, and inserts can be easily changed. Available in five solid end styles in sizes ½, ¾, 1, 1½ and 2 lbs. High grade handles, of course.

Write for Catalog 100

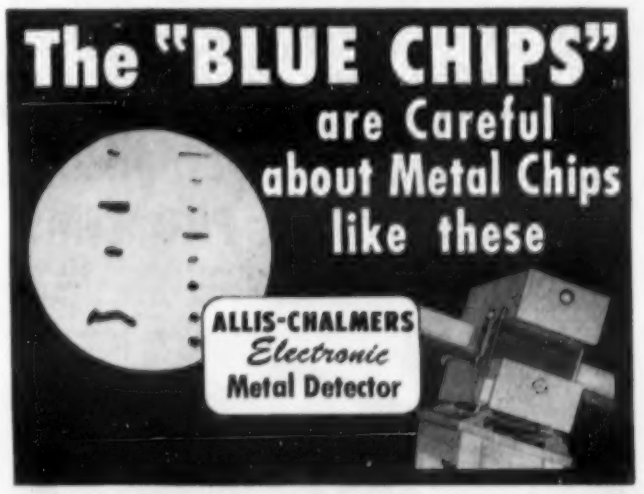
Mecco SAFETY MARKING TOOLS

M.E.CUNNINGHAM CO.

1030 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN - 3682

The "BLUE CHIPS" are Careful about Metal Chips like these



BLUE CHIP COMPANIES in the food industry take every precaution to protect product purity and their good names. They're the biggest users of Allis-Chalmers Electronic Metal Detectors. That extra effort to provide product purity is just one more reason they're on top. Can you afford to be less careful? Electronic Metal Detectors are the only sure way of detecting the presence of non-magnetic as well as magnetic particles in food packages. Spots particles as small as .047 inch in diameter. Unit fits production set-ups.

Call your nearby Allis-Chalmers district office for complete information, or write Allis-Chalmers, Milwaukee 1, Wis.

A-3712

ALLIS-CHALMERS

If you write maker identify as IEN - 3683

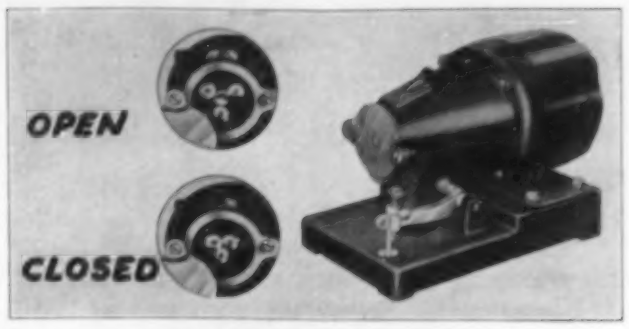
If you write maker identify as IEN - 3684

If you write maker identify as IEN - 3685

If you write maker identify as IEN - 3686

STRIPPING . . Motor-driven machine removes insulation from electric wire

Source: HIGH SPEED HAMMER CO.
313 Norton St., Dept. IEN, Rochester 5, N. Y.



Intended for production

Three discs, made of hardened steel, are "angled" into cutting position so they slightly overlap each other in this recently improved design of the ¼-hp. motor-driven wire stripper, previously described IEN-9679-49. The discs are adjusted to cut through the insulation. Slight pressure on the core of the wire at the intersection of the three arcs centers the work accurately. New cutting edges are presented by loosening each disc, turning it a small amount and then tightening it again.

The machine mounts on a bench in a production line. It removes all types of insulation, including plastic, from solid, stranded or multi-conductor wire. It will accept wire measuring to ½ in. in outside diameter, including the insulation, and will strip it to 1½ in. back from its end. Production is to 3,000 stripped ends per hour. List price is about $133.

If you write maker identify as IEN - 3687

PROTECTING . . Hand cream for prevention of contact dermatitis

Source: AYERST LABORATORIES
22 E. 40th St., Dept. IEN, New York 16, N. Y.

Fills the pores

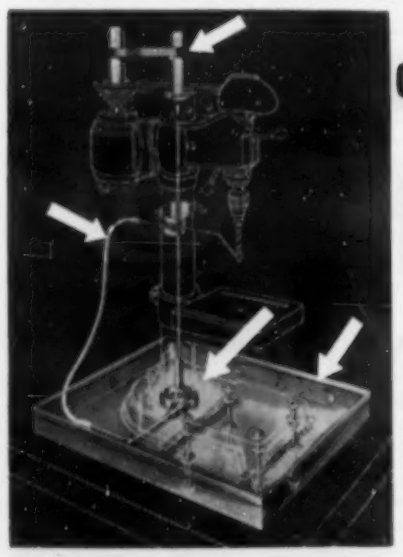
Kerodex trade names a new hand cream, available in several types, to prevent contracting dermatitis from water insoluble and water soluble irritants. Examples of the former are cutting oils, paints, enamels, tar, metal dusts, solvents, cleaning fluids. Examples of the latter are acids, alkalis, liquid coolants, emulsified cutting oils, mist and spray from alkali baths, plating solutions.

The cream is applied on the hands after they have been thoroughly washed and dried. About ½ teaspoonful is sufficient for both hands. It is spread evenly and lightly over the surfaces between the fingers and around the finger nails until it disappears. It will protect from 3 to 4 hr., depending on the process involved. Packaging is in 4-oz. tubes and in pound and 10-pound jars.

The company has prepared an illustrated bulletin on the subject covering description, application and the irritants against which the cream will protect.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3688



This BETTER **Coolant System** *Complete, Only*

$23.95 Fits any hollow-column drill press

Pays for Itself EVERY WEEK!

- Saves operator time
- Increases efficiency
- Extends drill life
- Ups speeds and feeds
- Gives exact size control and fine finish

NO EXTRA MOTOR
Works off tool's own power. Starts and stops with drill. 120 gph at 1750 rpm.

SO INEXPENSIVE
that all tools needing coolant can be permanently equipped. Saves shifting bulky tanks and cumbersome rigging.

IDEAL REPLACEMENT
Permits transfer of high-cost coolant units to big heavy machines.

PREVENTS ELECTRIC SHOCK
Can't shock or short circuit. Dangers so common with ordinary coolant systems are impossible with Wade.

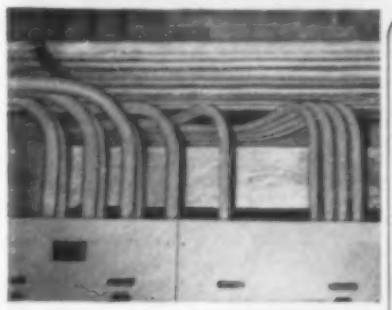
100% OUT-OF-THE-WAY
Nothing on the floor to kill space and trip over, nothing to impede the operator's efficiency. Makes a neater shop.

SAVES HIGH-PRICED TIME
No man hours wasted in hand applying of coolant or switching units from one tool to another. For want of this permanent automatic coolant supply, the average machinist loses enough time every few days to pay for the Wade's lifetime of service.

Get the FULL STORY! Call your Supplier or Write to:

WADE & SONS, 948 E. Truman Road, Independence, Mo.
division of Independence Pattern and Machine Works • Phone Clifton 9229

If you write maker identify as IEN - 3689

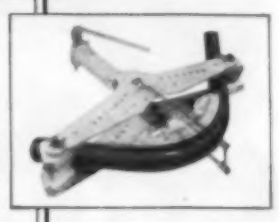


• 427½ hours in time
• $438.56 in materials

SAVED ON ONE JOB WITH A TAL PORTABLE BENDER

by Magaw Electric Co. Milwaukee

Savings on the first 90 bends repaid the *entire cost* of this Tal ONE-SHOT Bender—used in the electrical installation at new Technical Buildings of the Milwaukee Vocational School. 621 90° bends were made in 1¼" to 3" conduit, saving 621 elbows and cuts, and many more threads and couplings. Only 3 elbows were used on the entire job BECAUSE the Tal ONE-SHOT completes bends *in one single operation!* No shifting of conduit is necessary.

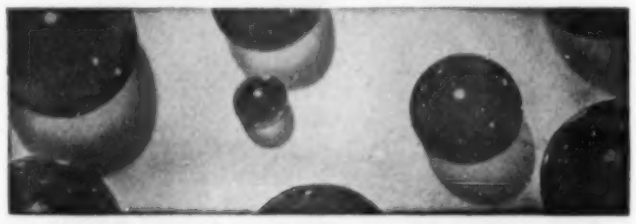


- Complete line of benders for rigid conduit in any sizes.
- Small combination production benders for rigid and EMT.
- TAL six-way hickeys do what others can't do.

TAL BENDER, INC.
DEPT. 2 • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 3690

NOW — Precision Balls of Synthetic Sapphire



These balls of synthetic sapphire, polished to within 20 micro-inches of sphericity, are resistant to wear, heat, and corrosion. In many applications they need not be lubricated.

Available in 1mm, 1/16 inch, ⅛ inch, and ¼ inch sizes, and in three surface finishes.

PROPERTIES

Coefficient of Friction	0.140
Hardness (Knoop)	1525-2000
Dielectric Constant	7.5-10
Modulus of Rigidity	21.5-27.5 x 10^6 psi
Thermal Coefficient of Expansion at 50°C (per°C x 10^6)	5.0-6.7
Chemical Resistance	Unaffected by acids, dilute alkali.

Call or write any LINDE office for information on these balls or the other forms of synthetic sapphire.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd St. UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

If you write maker identify as IEN - 3691

have working pressures range as high as 3000 psi. Specifically designed for remote push button control of hydraulic systems, as well as for the handling of any non-corrosive fluids. Poppet construction eliminates leakage. Impregnated coils are oil and moisture resistant. Unit can be mounted in any position. Available in 110-220 A.C.

Write for illustrated circular C.

WATERMAN ENGINEERING Company
725 CUSTER AVENUE
EVANSTON, ILLINOIS

If you write maker identify as IEN - 3692

CHAMPION E-X-P-A-N-D-I-N-G MANDRELS

give speed to every set-up

The flexible sleeve, mounted on tapered arbor, expands automatically to fit the hole. Inserted by hand — no arbor press needed. Always an exact, positive, concentric fit. Locked by a single mallet blow. Unlocked the same way. CHAMPION Expanding Mandrels are used in machine shops around the world. Save time, cut production costs, whether the job calls for machining one piece or a thousand.

Precision Model has expansion range of .010". Available in regular sizes to fit holes from 1/2" to 3" diam. Holds work to tolerances of .0002" run-out. Guaranteed for precision grinding, turning and milling operations.

Standard Model maintains close tolerances, handles material of any length bore, hard or soft metals — from thin tubes and bushings to heavy castings and forgings. A set of fourteen will fit every hole from 1/2" to 9 1/2" diam.

CHAMPION *Expanding Mandrels can be made in special shapes and sizes to fit any specifications. Quotations on request. Write for descriptive folder today.*

WESTERN TOOL & MFG. CO., INC.
Dept. 22 Springfield, Ohio

If you write maker identify as IEN - 3693

Get 19" Lift from 2 1/2" Clearance!

SIMPLEX
RATCHET LOWERING
JACKS

Lift or Lower Notch-by-Notch — Cannot be Tripped

With Simplex Ratchet Lowering Jacks a minimum of toe clearance is required — and only Simplex Jacks provide equal lift capacity on *toe or cap*. In fast jacking action, all-purpose utility, extra safety features and rugged strength for longer life, Simplex Ratchet Lowering Jacks give you more for your money! Capacities of 1 1/2 to 35 tons. Write today for Bulletin: Industrial 49.

SAFETY SUGGESTION — Use thin wood block — don't lift or lower steel against steel.

Simplex LEVER · SCREW · HYDRAULIC Jacks

TEMPLETON, KENLY & CO.
2527 Gardner Road Broadview, Illinois

If you write maker identify as IEN - 3694

NEW! Atkomatic SOLENOID Cast Iron and Cast Steel Valves

ATKOMATIC'S new line of cast iron and cast steel valves offer greater range of applications as well as new engineering principles. Internal design features compensate for expansion under heat, prevent sticking. Stainless steel hooded pilot seat screw permits more positive closing action. New design permits pressures to 1000 P.S.I. at 200° F., 500 P.S.I. at 450° F. Teflon disks inert to all media except hot fluorine are used. Removable inserts are used throughout complete range of sizes.

Available in sizes 1/2 through 2 inches.

Write for Technical Bulletin No. 106 for more complete information

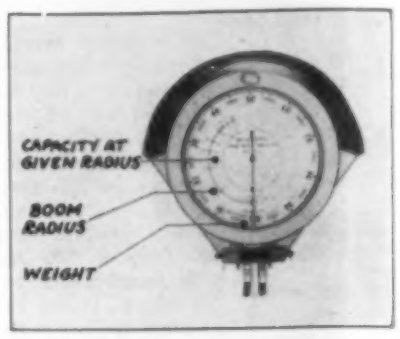
Atkomatic SOLENOID
ELECTRIC VALVES

ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 3695

SIGNALING . . Weight indicator protects a crane against overloading

Source: MARTIN-DECKER CORPORATION
3431 Cherry Ave., Dept. IEN, Long Beach 7, Calif.



Prevents overloading

Type SB-10 is a new load indicator to show a crane operator the boom radius at which he is working, the safe capacity of the crane at that radius and the weight he is lifting in pounds. The indicator represents further development of the equipment previously described IEN-2103-54.

A **hydraulic** cylinder mounts at the dead end of the hoisting cable on the crane to actuate the load readings. It connects through a reinforced hose line to the indicator which mounts in the operator's cab.

If you write maker identify as IEN - 3696

DRAFTING . . Tracing vellum, pencil line erasures will not ghost

Source: B. K. ELLIOTT COMPANY
126 Sixth St., Dept. IEN, Pittsburgh 22, Pa.

Free samples upon request

Elleo-Vel is a new blue tint tracing vellum on which to make pencil tracings. Lines can be erased repeatedly and the erasures can be repencilled without any "ghost" spots showing on blue or white prints. The sheet is made of white rags with a blue tint added to minimize glare of strong light. It will stand up under rough treatment. There is no limit to file life.

If you write maker identify as IEN - 3697

PACKAGING . . Self-adhesive tape contains reinforcing glass filaments

Source: MINNESOTA MINING & MFG. CO.
900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

Will not stretch

Tensile strength of this new No. 898 transparent filament tape is 325 lb. per inch of width. It is made with an acetate film backing. Its glass filaments are imbedded in its mirror surface adhesive. It can be employed to reinforce cartons without hiding important sales messages, trade marks, labels or other markings. It will not stretch or loosen during use or shipment.

It is approved for use under Rule 41 of the Uniform Freight Classifications to meet the requirements of Government Classification Type II under Specification PPP-T-97. Width ranges from 1/4 to 1 inch. Length is 60 yards. The tape is supplied in rolls. Longer rolls and greater widths are available to order.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 3698

Logan Ball Pedestal units consist of a large steel ball which rotates on a bed of smaller balls contained in a hardened steel cup with semi steel housing.

BALL PEDESTAL

Logan Ball Pedestals are particularly adapted to handling sheets or plates around shears and punch presses or other machines. The ball units permit turning or moving the plates in any direction and the pedestal construction provides a means of conveying without blocking the working area.

Logan offers Ball Pedestal units in several different sizes. Further information on request.

Ball Transfer units also available for table mounting.

Logan Conveyors
LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN - 3699

Brand New Tempering Ideas!

● As you're reading this ad our entirely new 20 page catalog should be just off press. It tells graphically some of the remarkable operating results being obtained in hundreds of plants by users of Homo furnaces.

You'll find photos and descriptions of typical installations, cut-away views of the furnaces, description of the control instruments, and complete specifications for various sizes of furnaces, work baskets and trays.

Just write us at 4905 Stenton Ave., Philadelphia 44, Penna. and ask for Catalog TD2-625(1).

LEEDS & NORTHRUP
instruments · automatic controls + furnaces

If you write maker identify as IEN - 3700

WANT A BETTER CHAIN?

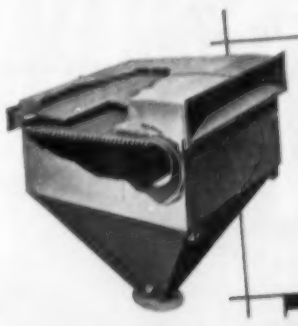
FOR DRIVES
FOR CONVEYORS

This new booklet presents the complete story of the new Rex R, RX and RR series Chabelco® Drive and Conveyor Chains. It explains how these improved chains can give *you* more for your chain dollar. Send for your copy of Bulletin 53-59 today!

REX® CHAIN BELT COMPANY OF MILWAUKEE

CHAIN BELT COMPANY 53-108
4675 W. Greenfield Avenue
Milwaukee 1, Wis.
Gentlemen:
Please send me Bulletin 53-59.
Name .....
Company ..... Dept. .....
Address .....
City ..... State .....

If you write maker identify as IEN - 3701



Solves Big Problem for Small Boiler Operators!

Buell 'LR' Collector gets 99% of all 100-mesh and larger cinder discharge. Top efficiency for boilers from 100 to 2000 BHP.

Draft loss so low you can use 'LR' on the smallest natural draft boilers.

Get all the facts—write for 'LR' Bulletin. Buell Engineering Company, Dept. 22-D, 70 Pine Street, New York 5, New York.

buell
Engineered Efficiency in
DUST COLLECTION

If you write maker identify as IEN - 3702

Thomas JAK-TUNG One-Handling System

TRUCKS & STORES LOADS WITHOUT UNLOADING

This double-purpose truck is designed for use with power truck or hand lift. When loads are to be moved long distances, a power lift platform or fork lift truck is used. For short hauls, spotting of loads and handling in close quarters, the JAK-TUNG Lift Unit is best. Either way loads can be trucked and stored without costly rehandling. Available with chemical resistant tires and "Job Suited" superstructures.

Send for free literature.

THOMAS TRUCK & CASTER CO.
445 Mississippi River, Keokuk, Iowa

If you write maker identify as IEN - 3703

This renewable fuse is different!

TRICO (it's custom powder-packed)

It's safer . . more efficient . . lasts longer. The renewal link is surrounded by protective arc-choking, time-lag powder. Links cannot sag, stretch and weaken, causing unnecessary fuse blows. Keeps link cool during momentary overloads. Powder-packing not only smothers arc, but also confines heat, flame and molten metal. Outer parts of fuse are protected from damage—no cleaning—no scraping necessary. It's no wonder users report "3 times the service."

WRITE FOR BOOKLET 206-A

TRICO FUSE MFG. CO. MILWAUKEE, WIS

If you write maker identify as IEN - 3704

product beauty in 3 dimensions

strength, utility, and beauty in over 25 different Rigid-tex Metal patterns to give designers unlimited imagination in product applications . . . that's what is offered you . . . extra strength and attractive designs . . . mar-resistant surfaces . . . reduced weight . . . mar-resistant surfaces . . . reduced weight . . . increased rigidity and shock resistance . . . plenty of sales appeal all rolled into one design-strengthened three-dimensional metal. write for your Product Design Folders.

RIGIDIZED METALS CORPORATION
6644 OHIO STREET, BUFFALO 3, N. Y.

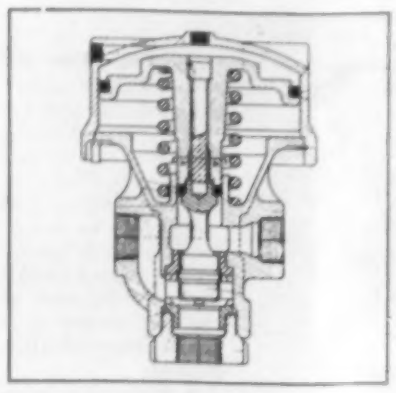
U.S. & Foreign Patents

See us at the BASIC MATERIALS EXPOSITION May 17-20, Chicago, Booth 135.

If you write maker identify as IEN - 3705

VALVE . . Air operated, teflon sealed, ½ to 2-in. sizes

Source: EMMET MACHINE & MFG. CO.
2249 14th St., Dept. IEN, Akron 14, Ohio



Only 12 parts

Type D532 Merit designates a new air-operated valve that is characterized by its compact design and its use of teflon ring packings on the piston and the stem. The valve is rated for regular duty at 350 lb. with temperature to 375 deg. F. It can be supplied for pressure to 2,500 pounds. The operating air cylinder will handle pressure to 100 pounds. The smallest ½-in. valve measures 9 in. in height. The 2-in. valve measures 12⅝ inches. Frictional resistance to movement is negligible under all operating conditions.

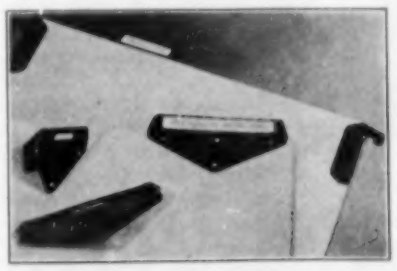
The spring-backed piston rides inside a cylinder which fits on a ventilated cone shaped extension of the housing and is held in place by a snap retainer ring. The piston stem fits in a square socket in the valve stem and is held in place by a socket screw. This screw is long enough to permit starting its threads prior to compressing the spring. Then it compresses the spring as it is turned into final position.

The square connection between the two stems prevents rotation of one on the other. When the stems have been brought tightly together, they seal against a second teflon ring riding in the finished bore in the body to seal the valve internally. The cap at the lower end of the valve can be supplied blank or can be fitted with a seat and port for three-way operation. It threads in place to make metal to metal contact with the valve body so no packing is required at this point. The two insert seats in the three-way assembly shown are identical.

The valve disc is skirted on both ends in the three-way design, the skirts acting as a means to prevent loss of steam or fluid from pressure to return during traverse of the disc from one seat to the other and to provide for a "washing action" across the seat face just prior to tight seating. Seating action is assisted, in addition to the action of the spring, by the teflon ring which presents a shoulder opposed by the internal valve pressure. The body is made of bronze. The disc is stainless steel or Monel Metal.

If you write maker identify as IEN - 3706

Precoated metal supplied in coils by Enamelstrip Corp., Dept. IEN, Allentown, Pa., is being used by Advance Products Co. to stamp and form tabs and hooks employed on its file folder and file guides. The precoated metal makes it unnecessary to send the parts out to be japanned after they are formed and, since the precoating is on both sides of the strip, there is no danger of internal corrosion on the unexposed surface.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3707

STOP *PROFIT-ROBBING* ACCIDENTS

EASILY REACHED

OUT OF THE WAY OVERHEAD

INSTALLED ANYWHERE

WITH PRODUCTION-BOOSTER WAYNE HOSE REELS

REMOVE ACCIDENT HAZARDS: No suspension cables or coils of loose hose to trip over. Operator draws out only the hose length needed, releases it for automatic rewind when he is finished.

RELIEVE WORK FATIGUE: Keep tools out of the way but within easy reach, cut waste motion. Automatic uptake positions tool directly over or beside work. Finger-tip control of tools.

PROVIDE SAFER EQUIPMENT: No electric motor needed. Reel is spring-activated.

The Wayne Production-Booster Hose Reel promotes high-speed assembly and production as well as safety. Turns your average operator into a skilled craftsman by making every motion count. You save wear, tear, and breakage, too, on hose and costly tools. Savings possible in hose life can offset cost of reel. Write for illustrated data folders.

THE WAYNE PUMP COMPANY
SALISBURY, MARYLAND
Toronto, Canada

Wayne — NATION WIDE SERVICE

If you write maker identify as IEN - 3708

CUSTOM MADE PRECISION STAMPINGS IN SMALL LOTS

Since 1921 we have specialized in the production of accurate die-cut metal stampings in small lots. The tool cost is low . . . actually as low as 15% to 20% of the cost of permanent tools. We guarantee dependable service and delivery on date specified.

• **SEND** us a sample or blueprint. We'll quote you a price. Or write for detailed information.

DAYTON ROGERS *Manufacturing Company*
Minneapolis 7D, Minnesota

If you write maker identify as IEN - 3709

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAVE The WORKER and you SAVE PRODUCTION

Stonehouse Signs are made in accordance with "American Standards Ass'n Specifications for Accident Prevention Signs"...the only authentic standards.

Hundreds of different stock-worded signs for prompt shipment • Special worded Accident Prevention signs also produced to your specifications.

Our complete Catalog No. 9, 64 pages, full color, free on request.

Stonehouse SIGNS, inc. MANUFACTURERS
Stonehouse Building · 842 Larimer
Denver 4 Colorado
"Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

Sturdy, Strong, Band-Saw Guide

MODEL 20

Paddock BALL-BEARING **BAND SAW GUIDES**

Model 20 PADDOCK GUIDE is strong, sturdy, gives secure, safe support to band saw blade. Note cut-out in illustration showing grooved wheel which supports back of blade. Two lower wheels support sides of blade. Ball-bearing, interchangeable wheels give "3-point friction free support" to blade. Model 20 is designed to fit above or below saw table—thrust wheel is easily adjusted for ⅛" to 1¼" wide blades. Can be installed on machines having 2½" back of blade to guide post. Write, giving size and make of machines on which guides will be used.

SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street Kansas City, Missouri

If you write maker identify as IEN - 3711

SIZE-MARKED
Gear Grip Socket Head
CAP SCREWS

ONLY P-K is SIZE-MARKED. Prevents errors by "green" workers, helps "veterans" to speed assemblies. Saves time and wasted screws when sizes get mixed up.

GEAR GRIP prevents slips by oily fingers, speeds work.

ADDED SALES FEATURE for your product. Customers like the SIZE-MARK . . it simplifies reassembly after servicing.

IF IT'S P-K . . . IT'S O.K. For guaranteed quality in any type Socket Screw specify P-K. Samples free.

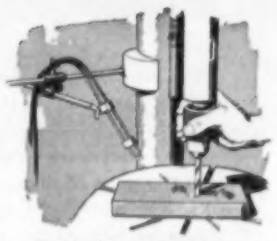
Ask your P-K Distributor or write: Parker-Kalon Division, General American Transportation Corporation, 200 Varick Street, New York 14.

PARKER-KALON®
SOCKET SCREWS

If you write maker identify as IEN - 3712

New ways to speed setups with CARBOLOY® ALNICO TYPE permanent magnets

You can eliminate many clamps, jigs, vises, fixtures and other costly units . . . speed setups and production . . . by using Carboloy Alnico permanent magnets.



Positioning coolant hose on drill press column.

Powerful, permanent energy makes these magnets ideal for innumerable holding, lifting and separating jobs. Unaffected by heat, moisture or vibration, the magnets cost nothing to operate . . . can save you time and money shopwide.

Holding steel plate during sawing operation.

Write today for your free Magnet Idea Literature Kit containing full details and diagrams of suggested shop uses for Carboloy permanent magnets. Write also for Carboloy "You-Try-It" Shop Packages. Perhaps they will spark you to greater savings in your plant. See coupon.

Get the "YOU-TRY-IT" Magnet Assortment

Shop Package No. 1

Shop Package No. 1 – Contains 48 Carboloy permanent magnets; 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00 (subject to applicable sales and use taxes). Order today.

Shop Package No. 2

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each; and 1 style–1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00 (subject to applicable sales and use taxes).

"Carboloy" is the trademark for the products of the Carboloy Department of General Electric Company

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Street, Detroit 32, Michigan

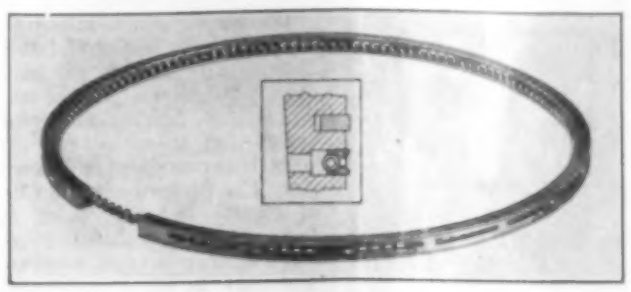
- ☐ Send me free Magnet Idea Literature Kit.
- ☐ Send me _____ Shop Package No. 1 at $10.00 each.
- ☐ Send me _____ Shop Package No. 2 at $15.00 each.
- ☐ Enclosed is check or money order for $_____. ☐ Send C.O.D.

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 3714

SEALING . . Piston ring for oil control in compressor or engine

Source: KOPPERS COMPANY
Scott & McHenry Sts., Dept. IEN, Baltimore 3, Md.



Proved in field tests for a year

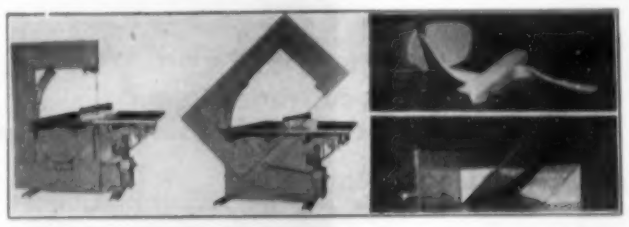
Conformable identifies a new oil ring made of flexible cast iron, relatively thin in cross section, with a wide channel around its outside face and a series of slots extending inwardly from the channel to an internal groove with a rounded base. A coil spring rides in compression in the groove, when the ring is fitted into a cylinder, to exert uniform radial action outward. The spring does not bear on the bottom or sides of the piston ring groove.

Application can be made on any type of internal combustion engine or compressor where oil relief holes or slots are provided in the back of the oil ring groove. The ring is available in diameters from 4 to 25 in. with minimum width at ¼ inch. Narrow bearing surfaces, on the sides of the channel, give the ring a high unit pressure on the cylinder so it will seat properly and assure removal of excess oil.

If you write maker identify as IEN - 3715

CUTTING . . Band type machine for use on solid or cored foam rubber

Source: FRANK EDGE SAW MFG. CO.
551 Ottawa, N. W., Dept. IEN, Grand Rapids 2, Mich.



Makes a clean smooth accurate cut

A band blade rides over four 12-in. ball bearing rubber tired aluminum wheels in the rectangular tilting frame of this new cutting machine. The blade is guided above and below the work table which measures 80 in. front to back by 60 in. in width, divided equally on the two sides of the cutting blade. Forward and backward travel is 78 in. for the ball bearing mounted mahogany or birch veneer table.

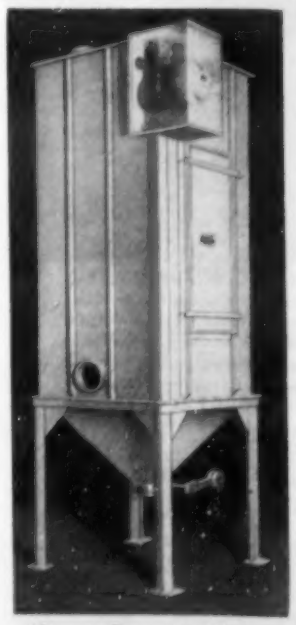
The work rides with the table and an adjustable edge stripper guide to make a clean smooth cut in foam rubber, fiber glass, rubberized hair, cellulose sponge, resin bonded fibre. The tilting action is power operated.

The band is driven by a 2-hp. motor to operate at 4,000 rpm. Tension is adjusted at the left hand top wheel. The band measures a little over 19 ft. in length by ½ in. in width and 0.02 in. in thickness. It is guaranteed for 100 operating hours. It does not require resharpening.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3716

RUEMELIN *Dust Control* EQUIPMENT



Vacuum Type Dust Filter with Electric Bag Shaker.

Ruemelin Dust Filters achieve a high rate of efficiency in the control of fine dusts. Our tubular bag design provides —

- Low resistance to air flow.
- Thorough shaking of bags while fan is shut down. Eliminates tautness.
- Maintenance, inspection and replacement of tubes made easy by our patented design.

Ruemelin Filters handle dusts created in metal working plants, foundries, cement mills and many similar industrial applications. Sizes from 250 to 30,000 cfm. Over 2000 collectors in service. Write for bulletin 24-D.

RUEMELIN MFG. CO.
3863 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

If you write maker identify as IEN - 3717

A TYPICAL APPLICATION

IT'S Cellusuede FLOCK

Beautifies car trunks, adds a protective coating, silences noise. New equipment simplifies application.

Dampens Vibration... Silences Noises...
ADDS BEAUTY, COLOR, SALES APPEAL

Every year more and more product designers find profitable uses for Cellusuede Flock. The fascinating textures of this versatile finish add new vitality, color, and sales appeal to many products. Or, Cellusuede takes on more enduring — even rugged textures for such varied functions as providing a protective cushion, dampening vibration, and silencing noises. Less expensive than fabric, Cellusuede is made principally from cotton, rayon, or hair fibers, and is available in an almost limitless combination of textures and colors to meet your needs.

Free Bulletin, Technical Assistance
Call on Cellusuede for help with any potential application. Unexcelled facilities are available for flocking test samples. Ask for free bulletin describing profitable uses.

A DURABLE PROTECTIVE COATING WITH A THOUSAND USES . . .

- Can be applied to any surface which will support an adhesive film.
- Easy to apply on an individual or production-line basis — by spray, vibration, or electrostatic process.
- Wide range of textures and colors to suit your needs.

CELLUSUEDE PRODUCTS, INC.
520 N. MADISON STREET, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 3718

compare the strength...

...of a Hackney Deep Drawn Shape such as this with an awkward cast, forged or welded pipe part which it might replace on your present line—and compare the savings in weight. You'll find that lightweight Hackney Parts often enable designers to shave off pounds without any sacrifice in strength, vibration resistance or durability.

Hackney Deep Drawn Shapes and Shells have been designed in many sizes and shapes—in capacities from 1 quart to 150 gallons. They can be produced to close tolerances. Seamless contours and extra smooth surfaces often improve product appearance. Write for further information.

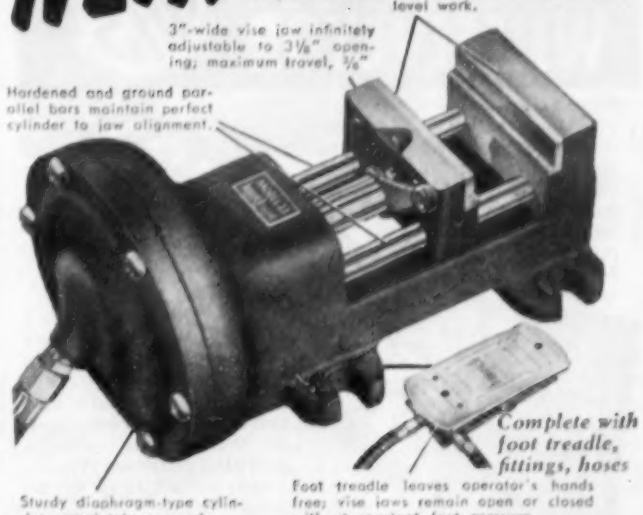
Pressed Steel Tank Company
Manufacturer of Hackney Products
1449 S. 66th Street, Milwaukee

Hackney MILWAUKEE

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as IEN - 3719

NEW! heinrich Model "33" AIR VISE
FOR HIGH-SPEED PRODUCTION



Precision-made Heinrich Model "33" Air Vise is easier to set with simple, ratchet-operated, triple-threaded adjusting screw. Grips with 15 times air line or compressor pressure! All operating parts protected from oil, dirt, chips, etc. Saves tooling costs; use it as base structure.

heinrich TOOLS, INC.
FORMERLY NATIONAL MACHINE TOOL CO.

SEE US AT THE ASTE SHOW
Philadelphia, April 26-30
BOOTH No. 1646
or write for FREE Catalog!

DEPT. 174-D • RACINE, WIS.
Drill Press Vises • Fixture Locks • Nibblers
Punches • Rod Cutters

If you write maker identify as IEN - 3720

Ratchet Head Model—two Tools in one

Head only of plain head model

Warpage of a 89.45 casting, due to clamp overtightening in a milling operation, was charged with 25 to 30 rejects daily at International Harvester Company, Louisville Works. PROTO Torquers eliminated this problem entirely... Other leading manufacturers are also effecting huge savings with this revolutionary tool. Ask your PROTO dealer for a demonstration. Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY
2271L Santa Fe Ave.,
Los Angeles 54, Calif.

TORQUER ADVANTAGES
- Fastest in World
- Automatic Torque-Limiting Release
- No Dials, Scales or Pointers To Watch or Break
- Both In-Lb. & Ft.-Lb. Models

5482

Eastern Factory: Jamestown, N.Y.
Canadian Factory: London, Ont.

PROTO TOOLS
PROTO means PROfessional TOols

If you write maker identify as IEN - 3721

Here is the pair for clean, dry air . .

JOHNSON AFTERCOOLER
Used where moisture is vaporized by the heat of compression. Circulates cooling water around the line, condenses the oil and water vapor so Separator can remove them. Simple in design, highly efficient in performance.

SIZES FOR ALL NEEDS

JOHNSON SEPARATOR
Removes more than 99% of all water, dirt and oil from compressed air or steam. Combines the *two* best principles of separation—first allows air to expand slightly, then changes flow direction with the "Thousand Baffles". Model illustrated is the newest idea in separator design, with self-draining trap mechanism built right in.

WRITE FOR BULLETIN

The Johnson Corporation
846 Wood Street, Three Rivers, Mich.

If you write maker identify as IEN - 3722

To save money, let 'em roll on the NEW MHS WHEELVEYOR

Here's the inexpensive, rugged, practical, *money-saving* way to move smooth, full-bottomed commodities in plant, warehouse and store, and to and from carriers. Save time, money and manpower with new MHS Wheelveyor!

Many great features for long service, easy operation, extreme flexibility and economy. Get your copy of Wheelveyor bulletin and plan your own Wheelveyor installation. Write today!

SEND FOR FREE BOOK!

MECHANICAL HANDLING SYSTEMS INC.
4605 Nancy Ave., Detroit 12, Michigan
Offices in Principal Cities
In Canada: Canadian Mechanical Handling Systems Ltd.—Factory in Windsor

If you write maker identify as IEN - 3723

MELTING . . Portable furnace, oil or gas fired, for aluminum, bronze

Source: W. C. CHENEY MFG. CO.
Box 3282, Dept. IEN, Seattle 14, Wash.

List price is $375

The blower equipped burner that fires into one end of this new portable furnace will handle oil or gas. The blower motor is ball bearing universal design for operation on 110 volts. It is controlled by a rheostat. The furnace takes 50 lb. of bronze and will bring it from room temperature to pouring temperature in 45 minutes. Assembly is on a structural frame mounted on casters. It weighs 390 pounds.

A hopper can be specified to stand over the charge-pour opening. It also mounts on casters. Each furnace is "burned in" at 2,800 deg. F. prior to delivery.

If you write maker identify as IEN - 3724

FURNITURE . . Steel tables, plastic tops, for plant cafeterias

Source: ROYAL METAL MFG. CO.
175 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.

Specifications upon request

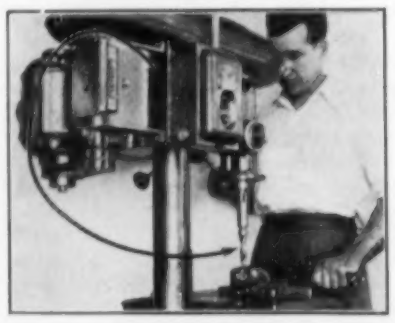
Single pedestal design, with four flat horizontal legs equipped with adjustable glides, and a two-pedestal assembly with three horizontal legs in each pedestal, are now available for installation in plant cafeterias. The bases are made of formed sheet metal with black crinkle finish and satin-finished kick plates.

The tops are Royaloid plastic with aluminum or plain edges in nine linen and wood grain finishes. The single pedestal units measure 30, 36 and 42 in. square or round. The two-pedestal assemblies are 30 by 60 in. to 36 by 72 inches.

If you write maker identify as IEN - 3725

DRIVE . . Four-speed transmission with Gilmer toothed belts and sheaves

Source: WESTERN MFG. CO.
3400 Scotten Ave., Dept. IEN, Detroit 10, Mich.



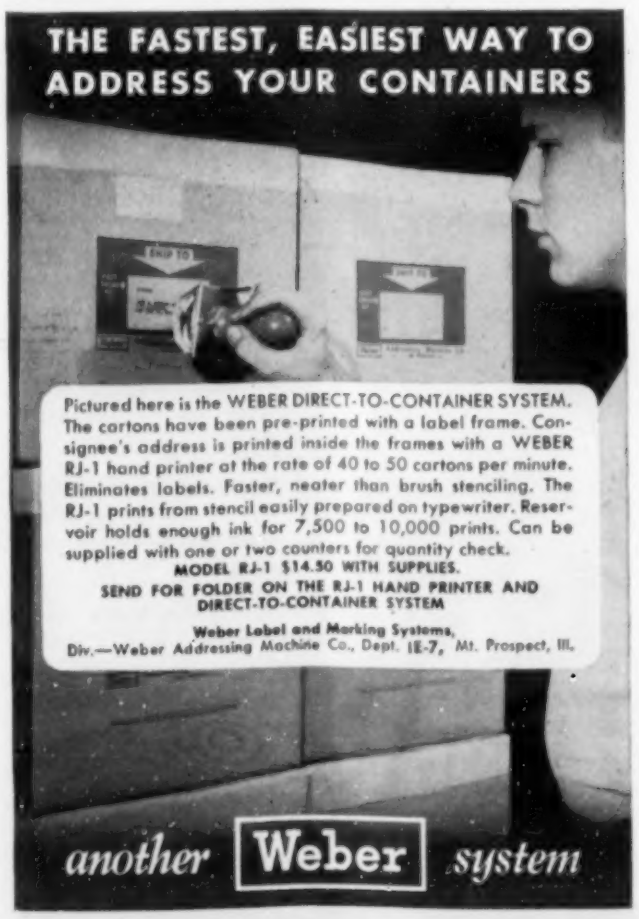
On a Delta drill

Model 4B-1 is a new lightweight four-speed transmission in which the speeds are selected by operating a lever on the housing. Gears are replaced in the construction with Gilmer toothed belts and sheaves carrying mating teeth to engage the belts positively. The transmission can be employed as a reducer or step-up drive on comparatively small machines.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3726

THE FASTEST, EASIEST WAY TO ADDRESS YOUR CONTAINERS



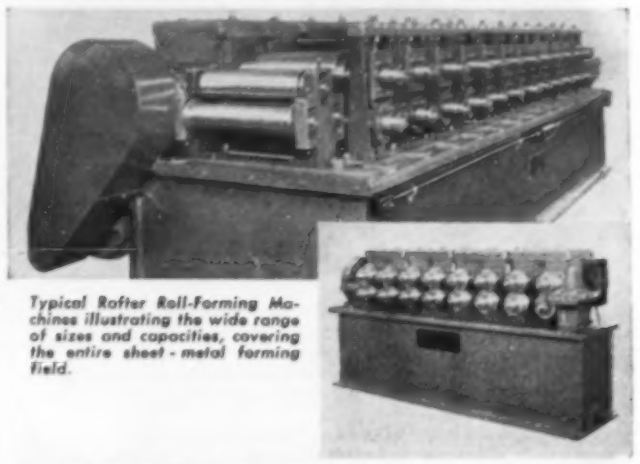
Pictured here is the WEBER DIRECT-TO-CONTAINER SYSTEM. The cartons have been pre-printed with a label frame. Consignee's address is printed inside the frames with a WEBER RJ-1 hand printer at the rate of 40 to 50 cartons per minute. Eliminates labels. Faster, neater than brush stenciling. The RJ-1 prints from stencil easily prepared on typewriter. Reservoir holds enough ink for 7,500 to 10,000 prints. Can be supplied with one or two counters for quantity check.
MODEL RJ-1 $14.50 WITH SUPPLIES.
SEND FOR FOLDER ON THE RJ-1 HAND PRINTER AND DIRECT-TO-CONTAINER SYSTEM
Weber Label and Marking Systems,
Div.—Weber Addressing Machine Co., Dept. IE-7, Mt. Prospect, Ill.

another Weber *system*

If you write maker identify as IEN - 3727

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet-metal forming field.

Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9, N. J.
GANG SLITTERS and PRESS BRAKE DIES

If you write maker identify as IEN - 3728

REX-WELD FLEXIBLE METAL HOSE

Rex-Weld is a high pressure, high temperature, flexible metal hose designed for the protective piping of searching liquids or gases. Rex-Weld absorbs the stresses of vibration — flexation — expansion and contraction — bridges the gaps in misalignment. The range of applications for Rex-Weld is virtually unlimited. Burst pressures to 12,000 psi and temperatures to 1,000 F. Available in steel or bronze — braid covered or unbraided in a wide range of sizes with fittings to meet your needs. Write today for complete information.

See our Catalog in Sweet's Plant Engineering File

FLEXONICS CORPORATION
EXPANSION JOINT DIVISION
Formerly Chicago Metal Hose Corporation
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

If you write maker identify as IEN - 3729

THE CORD SET

. . . Protecting Your Product's Reputation!

Consumer goodwill determines the reputation of your product . . . and it often depends on the cord assembly you use! That's why a Riverside cord set is the best investment you can make. You save assembly time with easily installed pre-fabricated wiring. What's more, you avoid the upkeep of specialized production equipment. But most important . . . you install "Reputation Insurance" on every assembly! Take advantage of our specialized engineering experience and production facilities. Send us samples or prints for recommendations.

Riverside Manufacturing
AND ELECTRICAL SUPPLY COMPANY
10215 Michigan Avenue • Dearborn, Michigan • Phone Tiffany 6-6800
WIRING HARNESSES AND ASSEMBLIES • CORD SETS • HEATER AND EXTENSION CORDS • ELECTRICAL SWITCHES • RELAYS • MOLDED RUBBER PRODUCTS

If you write maker identify as IEN - 3730

LEVIN® MICRO-DRILL PRESS

FOR VERY SMALL HOLES DOWN TO .002"

Designed to hold small drills in precision collets, thus overcoming the difficulty of making a drill run true as when held in a conventional drill chuck. Absence of a sliding quill guarantees maximum sensitivity with fingertip control. A mounted ⅛" capacity chuck can also be used.

Send for Catalog L describing Micro-Drill Press, full range of collet sizes, accessories and other precision tools

LOUIS LEVIN & SONS, INC., 3610 S. Broadway, Los Angeles 7, Calif.

If you write maker identify as IEN - 3731

INCREASE HEATING EFFICIENCY
LOWER HEATING COSTS

with **CHROMALOX** *Electric* **HEATERS**

EASY TO INSTALL • ECONOMICAL TO USE

Want the quick, low cost answer to almost any heating problem in your plant? Get it with Chromalox Electric Heaters! Over 15,000 types and sizes for heating dies, molds, platens; for preheating oil and superheating steam; for heating asphalt, greases, oils; for drying, curing, baking, dehydrating and other heating jobs. See how Chromalox Electric Heat can help cut your costs!

THIS CATALOG may be worth money to you

Write today for your copy.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

CHROMALOX

See Chromalox Strip Heaters Advertisement, Page 5

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 3732

EFFICIENCIES UP TO 98%

PHILADELPHIA SPIRAL BEVEL-HELICAL SPEED REDUCERS

For vertical or horizontal right angle drives where high efficiency and smooth dependable operation are desired, Philadelphia Spiral Bevel - Helical Reducers are widely preferred. They are available in single, double and triple reduction types in standard ratios from 1 to 1 up to 238 to 1. First reduction is always through spiral bevel gear set while precision shaved helical gears are employed in second and third reductions of double and triple types.

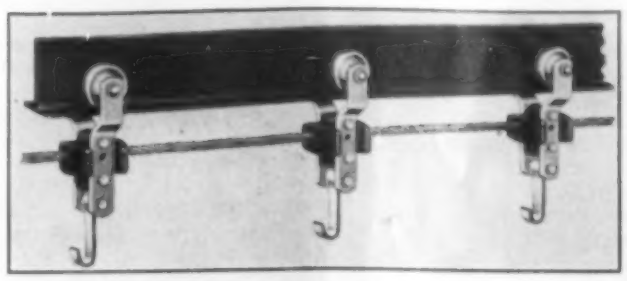
For details write for Catalog SB-50

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN - 3733

CONVEYING . . Overhead trolleys ride track in closed loop on wire rope

Source: E. W. BUSCHMAN COMPANY
4447 Clifton Ave., Dept. IEN, Cincinnati 32, Ohio



For unit loads to 200 pounds

New trolley design has been added to the company's Bush-Lock overhead conveying equipment, previously described IEN-9447-53, in which cylindrical bushings forming the anchoring points for each trolley are permanently swaged on preformed galvanized or stainless steel wire rope. The rope is supplied in ¼-in. size with the Bush-Locks at 12 and 15-in. centers and in ⅜-in. size, on slightly greater centers, to operate on standard sheaves. Nine trolley wheel types are available to serve under various operating conditions.

An adapter block, in two parts, applies over the bushings. The trolley arms are bolted over the block. Points where the wire rope is joined employ two-part bushings to terminate the joint inside the block for a continuous closed circuit loop. The trolleys ride on a standard 3-in. I-beam which can be shaped to turn to right or left, up or down, to convey, process and store work suspended from the trolley hooks. Variable speed drives rate 750 and 1,500-lb. pull.

If you write maker identify as IEN - 3734

LUBRICATING . . Spray equipment blows coolant through several nozzles

Source: C. A. NORGREN COMPANY
3432 S. Elati St., Dept. IEN, Englewood, Colo.

Lubricates, cools

Cutting oil or drawing compound can be directed in individual quantities and directions through small nozzles by means of this new Spray-Lube equipment. Assembly consists of a reservoir to hold the liquid, an air line filter and two pressure regulators. The regulators govern flow of air through two lines to pick up the coolant, carry it to one or more mixing valves and to supply air at 20 to 40 lb. to the mixing valves.

The valves assemble in parallel on the air and liquid lines. Each is equipped with a nozzle to direct its individual flow as required. A second filter applies on the delivery side of the reservoir so only clean coolant will reach the mixing valves. Solenoid valves can be added to the air and liquid lines to be tied in with the machine operation so the flow action remains in step with the machine. Application can be made on equipment for drilling, threading, milling, grinding, boring, turning, blanking, piercing, stamping, forming.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 3735

FASTER, LOWER COST, BETTER Pipe Identification with

Brady Pressure-Sensitive Markers

You also get NEW *BLUE STREAK* RELEASE COATING
Positively eliminates tugging, twisting, tearing, distortion. Markers come right off the card for fastest peel-to apply time ever!

It's more efficient, safer, thriftier to mark *what* flows *where*—with Brady Pressure-Sensitive Pipe Markers. Off dispenser card in a hurry—on the pipe to *stay* and be *seen* . . . for real savings in material cost and application time. *Background color and legend-overprint combinations meet A.S.A. Standard A-13.* And Brady Markers are Silicone-coated to stay clean, highly visible. A wide assortment of standard markers—or we'll make any kind, with any legend, to your exact order! For *free* samples, useful literature, write—

W. H. BRADY COMPANY
701 W. Glendale Ave., Milwaukee 12, Wis.

BRADY NO. 1 NAME • NO. 1 SOURCE
Pressure-Sensitive Industrial Products

If you write maker identify as IEN - 3736

AND NOW THE SHORT OF IT

TWO NEW LEADERS IN THE LONG LINE OF STANLEY DRILLS

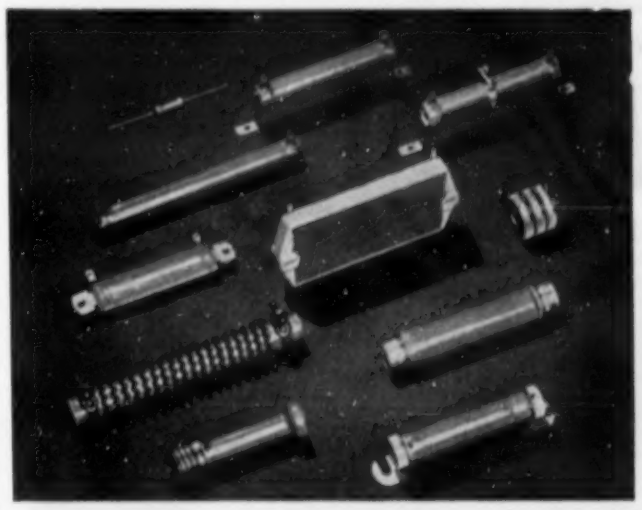
Maintenance men especially, welcome these new short drills, ⅜" and ½" capacity. Here at last, are drills they can take into crawl spaces, behind heavy machinery, in any tight corner. These two new Stanleys measure 12¼" and 12-3/32" with "D" handles attached . . . with handles removed (a quick, easy job) they're only 9⅞" and 9¾".

Typically Stanley in design and material, both drills have full anti-friction ball and needle bearings and alloy steel gears. No. 123 drills up to ½" in steel, 1⅜" in wood and turns 550 r.p.m. No. 383 drills ⅜" in steel, 1⅛" in wood at 800 r.p.m. Both new light weight short drills have the easily wiped, high polish, Stanley finish.

See your Stanley distributor, or for further information write Stanley Electric Tools, 414 Myrtle St., New Britain, Conn.

STANLEY ELECTRIC TOOLS

If you write maker identify as IEN - 3737



Get the right resistor!

• You'll be most likely to find it among Ward Leonard's dependable Vitrohm resistors — the most complete line ever offered by any manufacturer. Write for 64-page free catalog to Ward Leonard Electric Company, 33 South St., Mount Vernon, New York.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RHEOSTATS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN - 3738

IDEAL "Hand Type" CLEANERS — *Cut Cleaning Time and Costs!*

3 MODELS ...for EVERY CLEANING JOB

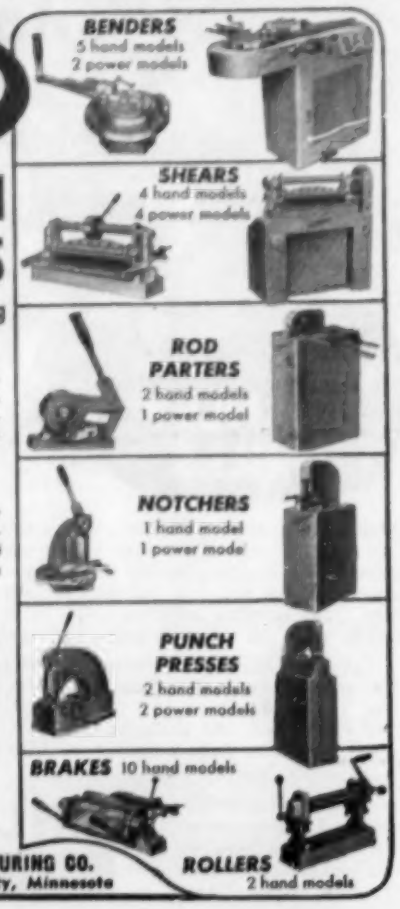
For easier, faster maintenance or production cleaning jobs — on machinery, stock bins, scrap pick up — there's an IDEAL "Hand-Type" Cleaner to meet your needs exactly — to save you money! Three great models, all built to rugged, real industrial standards. Get today's top cleaner value — get IDEAL!

Sold Through Leading Distributors

TRY ONE FREE!

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please give us FREE DEMONSTRATION of the IDEAL "Hand-Type" Cleaner for our plant.
NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

If you write maker identify as IEN - 3739



di-acro

PRECISION MACHINES

for Die-less Duplicating

NEW CATALOG packed with ideas for making parts by "Die-less Duplicating" — the money-saving, time-saving technique Diacro created.

BENDING MANUAL gives exact methods for bending processes in a variety of materials. Over 90 diagrams and charts with tooling suggestions.

See Di-acro Exhibit
Booth 1403, A.S.T.E.
Philadelphia, April 26-30

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Avenue, Lake City, Minnesota

If you write maker identify as IEN - 3740

Chicago RIVET "912"
AUTOMATIC RIVET SETTER
CUTS COSTS 3 WAYS

1 FASTENS FASTER . . . Only the speed of the operator limits the 912's riveting speed. Completely automatic. A push on the foot pedal automatically feeds, inserts and clinches the rivet.

2 DOES WORK OF SEVERAL MACHINES Quick change rotary hopper and raceway makes the 912 adjustable in 5 to 10 minutes to set different size rivets. Adjustable anvil height and 12-inch throat provide further versatility

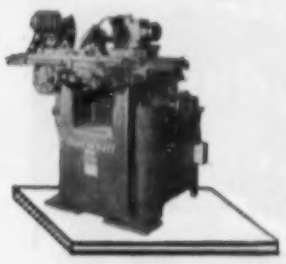
3 SAVES ON MAINTENANCE . . . The 912 is massively built to stand the shocks of constant use and is designed for quick, easy servicing and parts replacement.

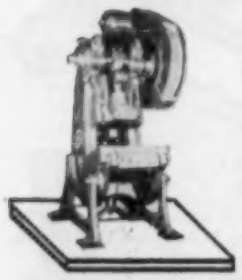
If your assembly calls for 3/16" steel tubular rivets or smaller, of 15/16" lengths or less, ask us to show you how the 912 can cut your fastening costs. Send a sample of your problem assembly (or blueprint) for a free fastening analysis.

FREE CATALOG contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 3741



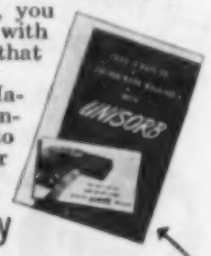


For Longer Machine Life Use **UNISORB®** Mountings

Eliminate 60%-85% of transmitted machine vibration, reduce machine maintenance and eliminate floor drilling — by mounting your machines on UNISORB.

No bolts, no lag screws when you use UNISORB pads with our special cement. Or, you can use UNISORB pads precoated with adhesive when mounting machines that do not require shimming.

"Why It Pays To Anchor Your Machines With UNISORB" tells the entire story about this modern way to reduce noise and vibration. Ask for your copy. No obligation.



the FELTERS company
206 South Street
Boston 11, Massachusetts
WRITE FOR YOUR COPY OF THIS INTERESTING BOOK

If you write maker identify as IEN - 3742

HANDLING . . Stacking pallet for cylindrical work standing on end

Source: EQUIPMENT MFG. INC.
21550 Hoover Road, Dept. IEN, Detroit 5, Mich.

Built to order

Angle iron extends up from the formed strap feet of this new pallet to form side supports, 28 in. in height, reinforced with horizontal and vertical intersecting cross members. Ends are left open for loading. Hinged cross arms drop out of the way while the work is being placed. Then they are raised and hooked on studs joining the side supports so the load is enclosed. The pallet is fitted with a hardwood floor. The design permits truck fork access from four sides.

If you write maker identify as IEN - 3743

CORROSION PROOFING . . Chemical produces protective vapor for metal

Source: HARRISON LABORATORIES
44 Kenmore Road, Dept. IEN, Indianapolis 19, Ind.

Application data upon request

Ammonium Nitrate in crystal form, known as RIV, rust inhibiting vapor, is now available to protect finished metal surfaces, assemblies, instruments and finished products through processing, in storage and during shipment. The crystals are slightly volatile at atmospheric pressure. They give off a vapor that covers surfaces, even those not normally reached by oils, with an invisible film that prevents corrosion.

Stored work needs only to be protected from air circulation as in a cabinet, drawer, carton, paper bag, tote tray. Products taken from storage are ready for use without further preparation since there is no oil or grease to remove. Parts can be returned to storage without additional treatment. Packaging is in ounce to 5-lb. containers at a list price of $1.50 to $48.

If you write maker identify as IEN - 3744

COMMUNICATING . . Phone booth excludes noises from surrounding areas

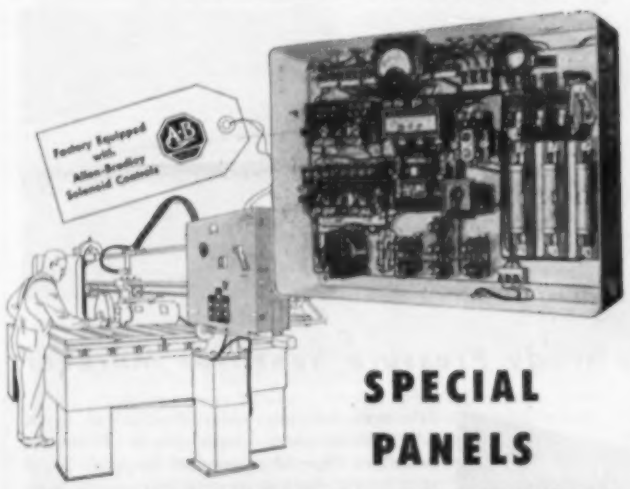
Source: BURGESS-MANNING COMPANY
749 Park Ave., Dept. IEN, Libertyville, Ill.

Hear—Here

Model 45 is a new addition to the company's line of Acousti-Booths. It is all metal construction and is designed for assembly against a wall, in corners, in a line, or as a circular island. Construction is characterized by absence of any door. It is not required due to the sound absorbing ability of the perforated walls. A light fixture is mounted in the ceiling. A private telephone or pay station can be set upon the shelf that forms the base.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3745



SPECIAL PANELS for SEQUENCE CONTROL

Any Size • Any Sequence • Any Machine

Allen-Bradley special control panels can be engineered to fit your particular machine. They can be designed for any sequence of automatic operation of motor driven machines. Such special panels, made by Allen-Bradley from standard components, provide correct sequence control, greater safety for operators, and lower installation and maintenance costs. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 3746

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-4.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 3747

LIKE AN
ATOMIC
EXPLOSION
JUST 1/32" FAUCET LEAK MUSHROOMS INTO ATOMIC WASTE OF APPROXIMATELY
95,000
GALLONS OF WATER YEARLY!

Cost of wasted water @ $1.90 per M. cu. feet is $24.14. If the leak is in a hot water faucet then fuel cost for heating this wasted water will be: $88.91 if coal (9,879 lbs.)†; $91.02 if oil (792 gals.)†; $84.41 if gas (84,411 cu. ft.)†. These figures authenticated Hackensack Water Co.* and American Gas Association†.*

you can stop this needless waste now with Pat'd

'SEXAUER' "EASY-TITE" Faucet Washers

THE ONLY WASHERS BUILT LIKE A TIRE WITH FIBERGLAS RE-ENFORCEMENT

Fiberglas, with a melting point 1200° Fahrenheit, is unaffected by destructive heat of modern superheat water systems; has a tensile strength of 460 pounds per square inch; is non-absorbent and resists all chemicals.

'Sexauer' "Easy-Tites" outwear ordinary washers 6 to 1! . . . Now available with a greatly improved special duPont COMPOUND which adds substantially to longer, trouble-free washer service. This COMPOUND keeps washer from going to pieces under extreme hot water, withstands impurities and has superior tensile strength. 'Sexauer' "Easy-Tites" won't spread, split or "mush-out." They outlast all other washers by 6 to 1; save labor on 5 REPEAT REPAIRS, water and fuel and prolong fixture life.

Send for your

Free Catalog!

For water savings, lower maintenance and fuel costs, write for new Edition H. 'Sexauer' "Easy-Tite" washers just one in over 3,000 TRIPLE WEAR plumbing repair parts and tools. It's today's accepted guide for purchasing and maintenance men in thousands of PLANTS, INSTITUTIONS, AND GOVERNMENT AGENCIES that rely on 'Sexauer' repair materials.

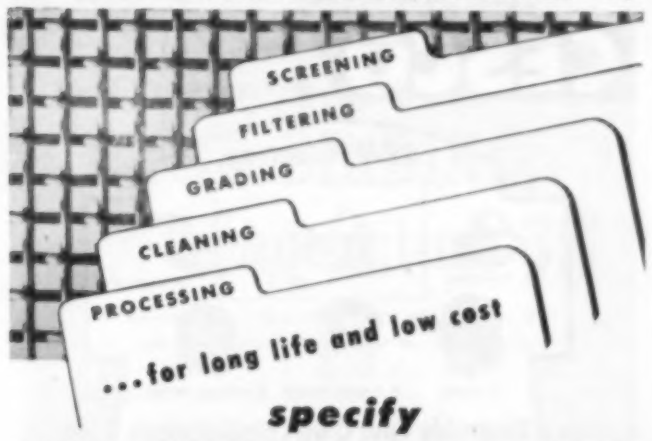
'Sexauer' Maintenance Engineer at your service

There's a 'SEXAUER' TECHNICIAN within your quick call who offers a special SURVEY SERVICE that sets up schedule of exact replacement parts for your plumbing regardless of make or age. A postcard will bring him and your NEW catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-44.
2503-05 Third Avenue, New York 51 *as advertised in THE SATURDAY EVENING POST*

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 3749



specify

CAL-WIC MESH CLOTH

You'll find CAL-WIC Mesh Cloth available in a wide variety of weaves, weights and meshes . . . fabricated in various types of metals and alloys for resistance to corrosion, abrasion, or high temperatures.

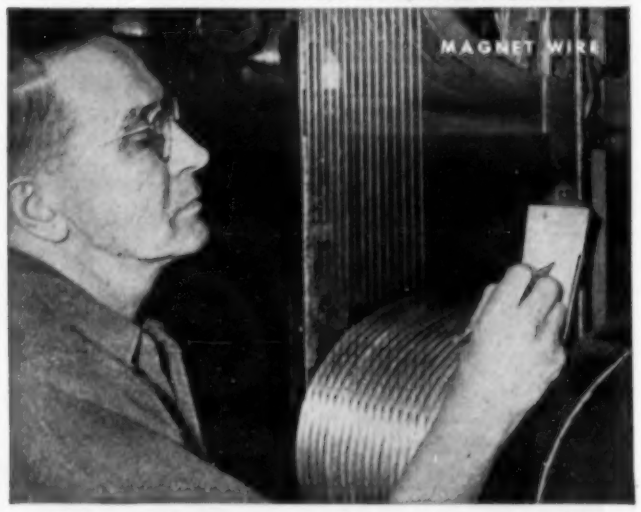
For original equipment or replacement, investigate the advantage of "precision-made" CAL-WIC Mesh Cloth. Write for further information.

THE COLORADO FUEL AND IRON CORPORATION — Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION — Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

CAL-WIC
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION (CFI)

1904

If you write maker identify as IEN - 3750



Regular as Clockwork

They miss nothing — these persistent Anaconda inspectors. Every 1½ hours they check the magnet wire on every enameling machine . . . and this inspection is noted on the card beside the machine. This card is kept as part of the permanent quality control record.

This wire must pass 30 different tests in the toughest control program in the industry today. As a result, many customers have eliminated incoming inspection of ANACONDA Wire. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.*

50364

ANACONDA® —TODAY'S HEADQUARTERS FOR MAGNET WIRE

Class A: ENAMEL • FORMVAR • NYFORM • NYLON
Class B: VITROTEX® Class H: SILOTEX® Reg. U. S. Pat. Off.

If you write maker identify as IEN - 3751

ELIMINATES

WATER CONDITIONER

(not a softener!)

Eliminates mineral scale in most raw waters — usually without the use of compounds or other additives. Tremendous savings on equipment maintenance, repair and replacement.

Sold on a Written 90-Day Money Back Guarantee

Dealers in principal cities. Successfully employed by industries throughout the nation. Consult your dealer or write direct. No obligation, of course.

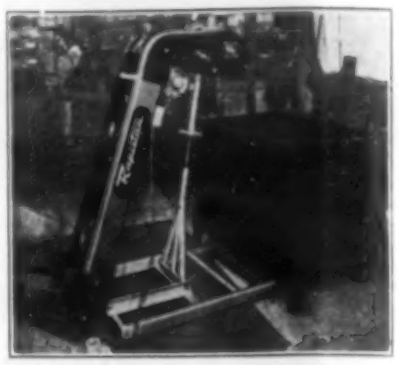
EVIS MANUFACTURING CO.
40 Boardman Pl. · San Francisco, Cal.

EV-444 E © 1954, E. M. CO.

If you write maker identify as IEN - 3752

CONVEYING . . Magnetic belt unit to handle ferrous work and scrap

Source: RAPIDS-STANDARD COMPANY
342 Rapistan Bldg., Dept. IEN, Grand Rapids 2, Mich.



Stationary magnets

Permanent magnets, mounted in the housing of this new Type MP conveyor beneath the motor-driven belt, hold ferrous work and scrap on the belt so they will be carried up from about floor level for delivery into a bin or container. The housing is a box channel section made of ⅛-in. aluminum. It measures 4 ft. in length. The magnetic field stops short of the top drive pulley so the parts are discharged as they ride over this pulley.

The belt is smooth neoprene measuring 10 in. in width and carrying stitched cleats of the same material at 12-in. intervals. The cleats prevent cylindrical objects from rotating in one spot while the belt is moving forward at its normal speed of 75 ft. per minute.

The conveyor is mounted on a 24 by 30-in. base equipped with four 3½-in. Rapistan steel wheels. The base height of 3½ in. is sufficiently low so the receiving end of the conveyor can be moved beneath trucks and machines such as presses. Discharge height is adjusted by turning a jack screw that forms part of the base assembly. Delivery height can be located between 38 and 56 in. above the floor. Drive is by a ½-hp. motor. It is subject to specification for standard electrical characteristics.

If you write maker identify as IEN - 3753

TESTING . . Indenter and scale reads foam and sponge rubber hardness

Source: PACIFIC TRANSDUCER CO.
11921 W. Pico Blvd., Dept. IEN, Los Angeles 64, Calif.

About $28

A reading is set up on this new Model-302-S Pandux tester by placing it upon a ¾-in. specimen thickness of foam or sponge rubber and pressing it down so its base is flush with the material surface. This causes an indenter to press into the sample to provide the scale reading. Thin materials can be stacked to the ¾-in. standard thickness. Measurements are reproductible.

The instrument applies a given load over a given area. It employs displacement of the load as the indication of hardness or resiliency of the material. The values on the scale are based on displacement of a constant load of 250 gm. over an area of one centimeter. Weight is 6 ounces. Dimensions are 2¼ by 1⅛ by 3⅝ inches. Finish is in bright chromium.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3754

GLASS PRODUCTS

MADE TO *YOUR* SPECIFICATIONS

If work in your laboratory, process plant, dairy, engraving plant, textile or paper mill requires glass products made to your specifications, get Sentinel Glass Co. to do the job for you. Sentinel special glass products—tailor-made to fit the application — offer the advantages of:

- TRANSPARENCY
- NON-CONTAMINATION
- RESISTANCE TO CORROSION
- LOW INSTALLATION AND MAINTENANCE COSTS

Whether you need spirals, beakers, retorts, etc. in odd shapes and sizes or the drilling and grinding of glass, write or phone. We'll give you an estimate promptly and any additional information you may require.

SENTINEL GLASS CO.
HATBORO, PENNA.

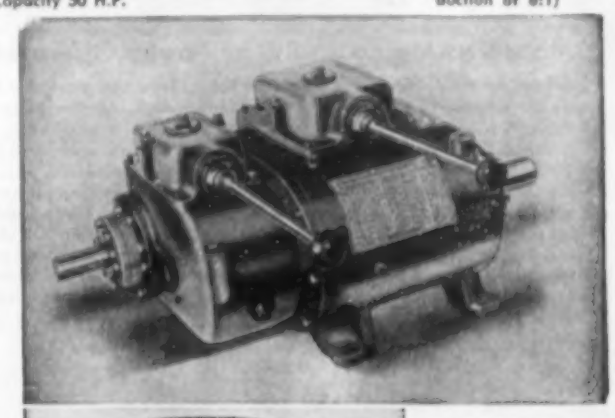
PHONE OSBORNE 5-5700

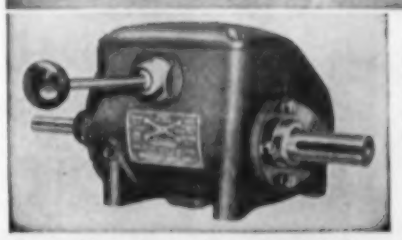
If you write maker identify as IEN - 3755

WESTERN "SUPER" *with* 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. Capacity 50 H.P.

in geometric progression of 1.29 (total reduction of 6:1)





(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type.

Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

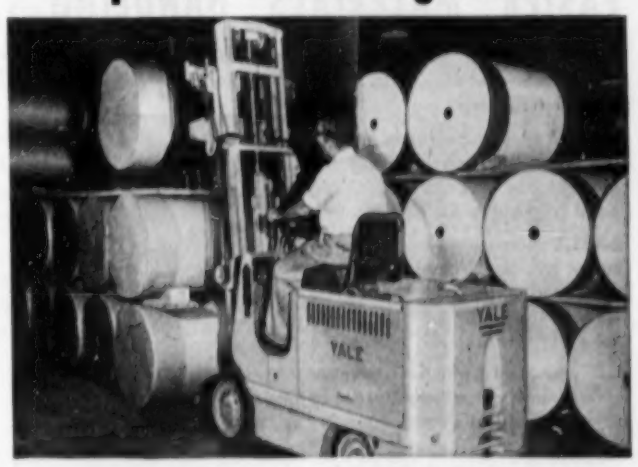
up to 100 h. p. For Materials Lifters, Milling Machines, Shapers, Turret Lathes, Rocket Drills, Molders' Sand Cutters, Gear Cutters, Die Makers, Boring Mills, etc.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO. — 1498 BROSTEN — DETROIT, MICHIGAN

If you write maker identify as IEN - 3756

Now one Yale Electric Truck serves a variety of plant handling needs



▲ Efficient handling is assured with this Yale Electric Truck and Yale use-extending attachments.

Attachments enable Yale Trucks to perform dozens of specialized jobs

Hydraulic Clamping Device

Pusher Attachment

Interchangeable YALE attachments . . . installed in minutes—removed as easily . . . put the mighty power plant and trouble-free hydraulic system of a YALE Electric Truck to work where you want it . . . doing jobs that formerly took many men hours or days.

Versatile YALE Electric Trucks . . . and the industry's widest range of Gas, Diesel, and LP-Gas models . . . are now available under a flexible "3-Way-Finance-Plan" that is quickly adaptable to your needs. Ask your YALE representative for details or mail the coupon.

YALE*

INDUSTRIAL TRUCKS AND HOISTS

*Reg. U. S. Pat. Off.

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 364
Roosevelt Boulevard, Philadelphia 15, Penna.
Please send me further information on:
☐ YALE Trucks and attachments ☐ 3-Way-Finance-Plan

Company _____
Name _____ Title _____
Street _____ City _____ State _____

In Canada write: The Yale & Towne Manufacturing Company
St. Catharines, Ontario, Canada

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 3758

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 3759

WEBB

TOWVEYOR*

for FASTER, SAFER & EASIER MATERIALS HANDLING

FASTER travel from loading to unloading stations—trucks are delivered to proper destination without wasted traveling time.

EASIER handling—trucks engage Towveyor chain by lowering tow pin and are disengaged at any point by raising of tow pin.

SAFER floors—Towveyor eliminates overhead chains and supports and employees can safely walk or truck over any portion of the system.

Cut your costs with a Towveyor system that will efficiently speed up your materials handling.

*Towveyor is a registered trademark identifying floor truck conveyors patented, manufactured and installed by the Jervis B. Webb Company.

JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8915 ALPINE AVE. • DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 3760

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.

DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

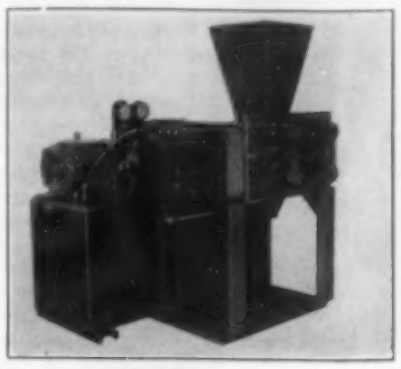
Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 3761

PRESS . . Hydraulic machine for plastic preforms, is automatic

Source: LOGAN ENGINEERING CO.
4901 W. Lawrence Ave., Dept. IEN, Chicago 30, Ill.



Details on request

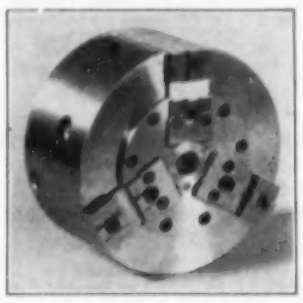
Plastic material feeds by gravity to the mold cavity in this new horizontal machine. Finished preforms discharge in the same manner. The machine can be set to apply any pressure on the die to 150 ton. Preforms can be made to measure 25 sq. in. in area to 1¾ in. in thickness and to 1¾ lb. in weight. Weight and thickness can be controlled within 0.5 per cent for the completed preform.

Electronic controls govern the piston movements and stop the machine before it can operate incorrectly. The operation is practically free from dust. The control and the moving parts are enclosed.

If you write maker identify as IEN - 3762

CHUCK . . Pneumatic design includes manual centering adjustment

Source: BUCK TOOL CO.
2015 Schippers Lane, Dept. IEN, Kalamazoo, Mich.



Accurate to 0.001 inch

New 12-in. size has been added to the Ajust-Tru wedge actuated pneumatic chuck line. Construction is characterized by the independent centering action employed by applying a wrench on sockets located around the body. Turning the sockets sets the chuck body over on its adapter for final adjustment prior to start of a production run.

Jaws can be machined on tool room equipment and then the chuck can be placed on a production machine and final adjustment made by the manual action for operating accuracy within 0.001 inch. Hardened top jaws can be employed without need to regrind when chucking or rechucking a job. The final adjustment can be made for exact operation while line pressure is on the chuck. The company is prepared to supply the chuck for use on existing equipment or to also supply air cylinders for a complete installation.

If you write maker identify as IEN - 3763

Good way to exterminate the weeds around your plant and sterilize the soil to eliminate growth of any new vegetation for one to five years is to purchase and apply some Knox-All from Knox Chemical Co., 18 E. Kinzie St., Dept. IEN, Chicago 11, Ill. The weed killing capacity of the liquid material is unaffected by sun or rain. One spraying will do the job. The company has prepared a folder presenting details.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3764

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880.

FACTORY-MILL & WAREHOUSE TRUCKS

Cutting Handling Costs since 1880

WRITE *TODAY for catalog and prices*

3000-lb capacity

Complete Line —
For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save—time AND money. Francis heavy duty, economical trucks feature strong iron work—hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

Manufactured by
HOOSIER FENCE CO. Inc.
Dept. IEN 1701 E. 38th St., Indianapolis, Ind.

If you write maker identify as IEN - 3765

CESCO *RIGHT... before your Eyes!*

Assemble Your Own Combinations

Items A, B and C can be used with either items 1 or 2 illustrated above so you can make six different combinations. The old-fashioned way you would buy a helmet and headgear, a shield and headgear, and so on until you had six combinations (twelve items) to do the same thing these five separate pieces will do.

Save buying extra parts . . . save money. On your next order specify CESCO interchangeable helmets and face shields.

They're—*"Right... before your Eyes."*

Send TODAY for CESCO literature

CHICAGO EYE SHIELD COMPANY · 2326 Warren Boulevard, Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City D. F., Milwaukee, Montreal, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa, Wichita

If you write maker identify as IEN - 3766

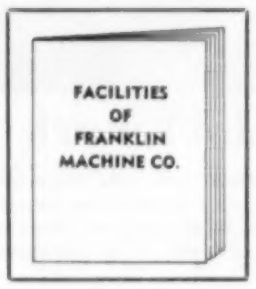
"Is manufacturing your problem?"

Here's what we can make for you:

Metal Products
Tools, Jigs, Fixtures
Special Machinery
Experimental Models

Operations can include:

Machining
Welding
Plating
Assembling
Inspecting
Finishing



Manufacture and ship under your label

Ask for "Facilities Bulletin"

FRANKLIN MACHINE CO.
116 Academy St., Dept. IEN, Newark 2, N. J.

If you write maker identify as IEN - 3767

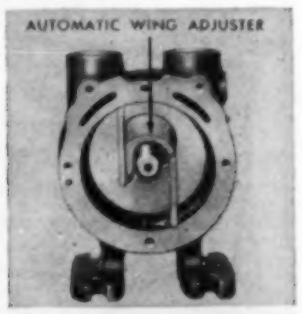
When it has to Run for Years and Years

WITHOUT FAILURE

MAKE IT A LEIMAN VACUUM AND PRESSURE PUMP

Leiman users say this:
"Almost continuous operation, 24 hours a day for 21 years"
"Using Leiman pumps on 350 machines. No pump has given a moment's trouble"

4-WING TYPE. Vacuums to 20"; pressures to 15 lbs.; displacement to 162 cfm. Wings take up their own wear, insure positive pressure or vacuum.



2-WING TYPE. Vacuums to 29.9"; pressures to 25 lbs.; displacement to 48.8 cfm. Automatic wing adjuster forces steel blades to meet cylinder wall, no sticking.

Write for 16-page catalog and blueprints of typical applications on Leiman rotary positive pumps—choice of industry since 1889.

SEE OUR CATALOG IN SWEETS FILE S

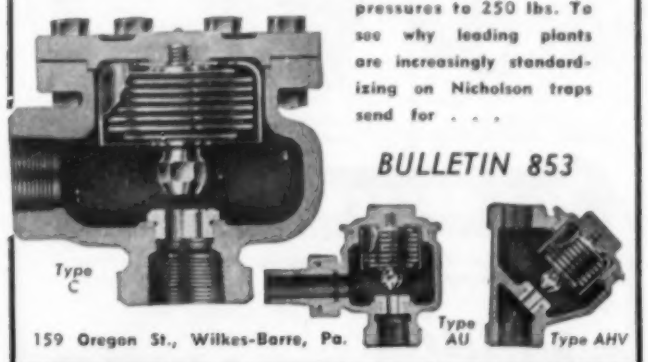
LEIMAN BROS., INC.
166 Christie Street, Newark 5, N. J.

If you write maker identify as IEN - 3768

Nicholson Steam Traps

STOP AIR BINDING, Raise temperature 35°

Equipment temperatures were up 30° to 40° higher after Nicholsons replaced mechanical traps in his plant, according to Chief Engineer H. F. D. He also reports faster warm-up, stating that all air-binding was relieved. And "saving in steam waste cut our fuel cost at least 10%". 5 types for process, heat, power. Sizes ¼" to 2"; pressures to 250 lbs. To see why leading plants are increasingly standardizing on Nicholson traps send for . . .



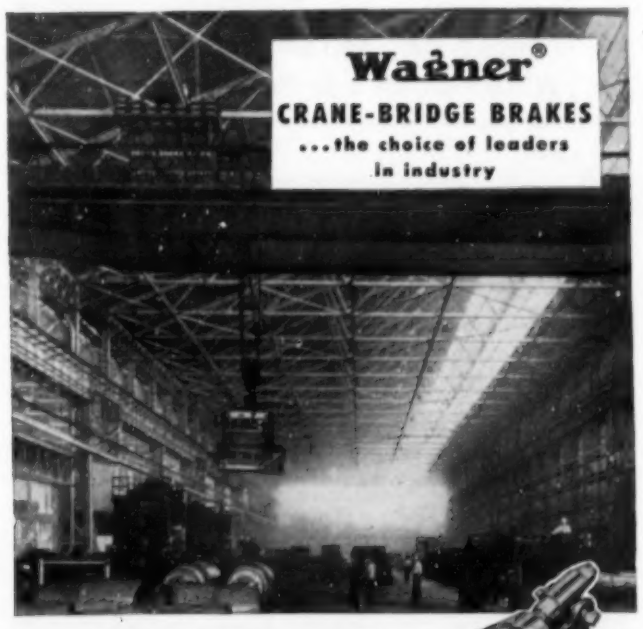
BULLETIN 853

159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.

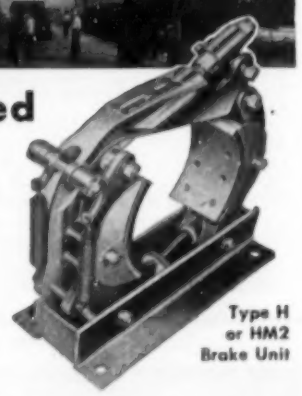
TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 3769



Wagner Powered Hydraulic Crane Bridge Brakes

stop tons of weight at the touch of a toe . . .



Type H or HM2 Brake Unit

With Wagner *Powered* Hydraulic Crane Bridge Brakes your operators can bring even the largest crane to a safe, smooth stop with little physical effort. Loads can be spotted accurately—production can be stepped up—several brakes can be operated from one pedal—*all with less operator fatigue!*

Wagner Powered Hydraulic Braking Systems are designed for applications where frequent starts and stops are necessary . . . where close spotting is used . . . where large heavy equipment is involved . . . and for applications where exceptional ease of brake operation is desired.

Wagner Powered Braking Systems reduce the operators' tendency to drag brakes and wear out wheels and linings quickly . . . One customer reports sufficient savings on brake relining costs to pay for the power unit in less than two years! These systems mean longer life for your equipment—cranes can be controlled without plugging the bridge motor and damaging the motor and gears.

Wagner Powered units can be added to your present Wagner Hydraulic Bridge Brake System. Delivery is quick—only eight weeks are required for the average order. Investigate this new method of braking today—write for Bulletin IU-36 which fully explains and describes Wagner Powered Hydraulic Braking.

Wagner also offers brake wheels and non-scoring lining for replacement needs. Lining is available in rolls, blocks and discs. Section 6 of Catalog IU-40 gives complete information.

Wagner Electric Corporation EST. 1891

154-1A

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 3771

GAGE . . Electronic, reads thickness on access to metal from one side only

Source: SPERRY PRODUCTS INC.
1000 Shelter Rock Road, Dept. IEN, Danbury, Conn.

For purchase or lease

Visual indication of steel thickness, in a range from 0.014 to 0.400 in., shows on the cathode ray tube of this new design of the company's ultrasonic Reflectogage when a "search head" is positioned on the steel surface. The overall range is divided into six intermediate ranges, minimum at 0.014 to 0.025 in. and maximum to 0.222 to 0.400 inch.

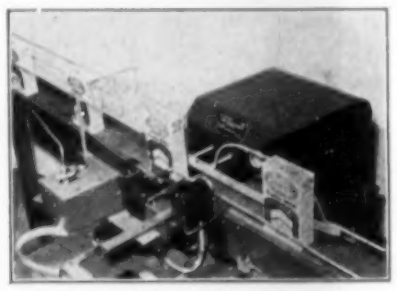
Ultrasonic waves, generated by the instrument, travel through the steel until they reach the opposite side of any internal defect such as a delamination. Then they are reflected back and received in the intervals between those in which the signal is being sent. The reflections are impressed on the cathode ray screen to produce a pattern that can be read in terms of thickness within a tolerance of 2 per cent.

A single connection cable is supplied to cover all six thickness ranges. It measures 4 ft. in length. A calibrated tape is made proportional to the screen size for maximum reading space between calibrations. The desired range can be brought into correct position between the base line limits by turning a crank. The pattern that indicates thickness is sharp and easy to read on the scale. Automatic control maintains constant height of the fundamental indications. The instrument is improved over that previously described IEN-10014-47.

If you write maker identify as IEN - 3772

WEIGHING . . Automatic scale checks, rejects off-weight containers

Source: HI-SPEED CHECKWEIGHER CO.
407 Cliff St., Dept. IEN, Ithaca, N. Y.



Bulletin "Checkweigher"

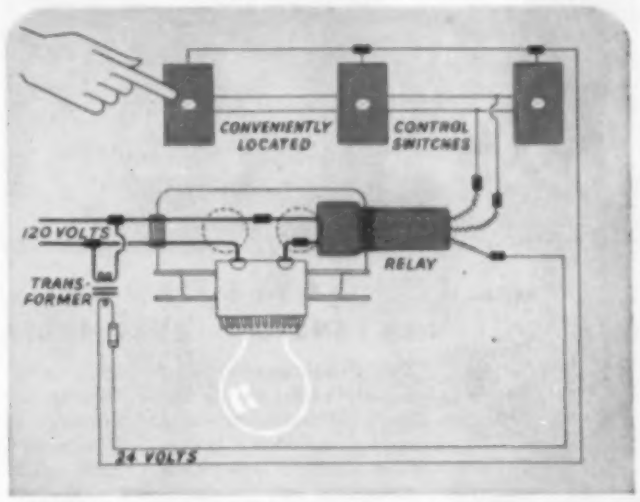
Filled containers, to 10 lb. in unit weight, are brought to this new Hi-Speed Checkweigher scale on a belt conveyor. The scale weighs the containers one at a time. It passes those that are within acceptable limits. It rejects those that are over or under weight to an off-bearing conveyor. It signals with a red light to indicate underweight and with a green light for overweight.

The scale will handle 80 containers per minute, depending on size and weight. It has a rejection point accurate within 1/16 oz. at maximum speed. Range of deviation from acceptable weight can be adjusted from ¼ to 2 ounces. The equipment installs in a 4-in. belt conveyor line and occupies 22 by 28 in. of floor space. It is operated on 110-volt 60-cycle ac. It employs standard Taylor Instruments and a Type-P2G Photoswitch that permits servicing by the user's maintenance department. List price is $2,480. Shipping weight is 540 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3773

If you write maker identify as IEN - 3774



NEW Remote Control Relay System has many industrial uses

● Originally designed for residential applications, this new, Low Voltage Control System has dozens of industrial applications. Relays are controlled from any number of conveniently located switches operating on 24 volts. Only the load circuit is at 120 volts.

Write for Bulletin 1124. Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

SQUARE D COMPANY

If you write maker identify as IEN - 3775

DESIGN IDEAS FOR YOU

in every issue of the

"NEOPRENE NOTEBOOK"

New products made of neoprene, Du Pont's versatile chemical rubber.

New engineering developments showing neoprene's wide range of applications.

Performance data proving neoprene's superiority in the field.

DU PONT

Better Things for Better Living ...through Chemistry

MAIL READER-SERVICE CARD FOR YOUR FREE SUBSCRIPTION

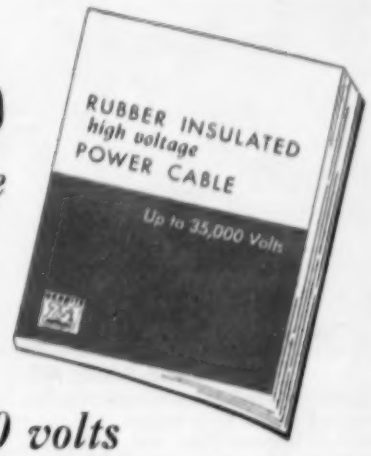
NEOPRENE

The rubber made by Du Pont since 1932

If you write maker identify as IEN - 3776

write for this 128-page manual

RUBBER-INSULATED *high voltage* POWER CABLE



up to 35,000 volts

If you are joining the trend to high voltage distribution in your plant, you'll want this valuable reference book. It's your complete guide to shielded high voltage, rubber-insulated cable design, including installation, splicing and terminating techniques. Write for Bulletin IE-1075 to The Okonite Company, Passaic, New Jersey.

OKONITE *insulated cables*

2194

If you write maker identify as IEN - 3777

CAMBRIDGE EXTENSION PYROMETER

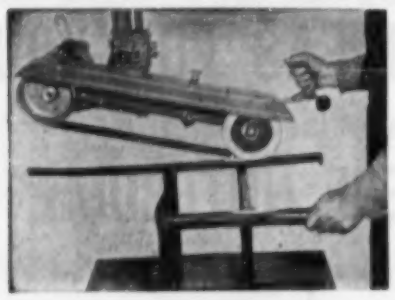
This Cambridge Surface Pyrometer is extremely useful in the Paper, Textile and Steel industries for the determination of surface temperature in hard-to-get-at places. It is accurate, dependable, rugged, quick-acting and easy to use. Other single-purpose and combination models also available for use in Rubber, Plastics, Printing, Glass and Electrical and many other industries.

Send for bulletin 194 S.A.

CAMBRIDGE
ROLL • NEEDLE • MOLD
PYROMETERS

CAMBRIDGE INSTRUMENT CO., INC.
Pioneer Manufacturers of Precision Instruments
3710 Grand Central Terminal New York 17, N. Y.

If you write maker identify as IEN - 3778



FOR THE FINISHING TOUCH

You can't beat this new 6-72 Vonnegut Abrasive Belt Grinding and Polishing Machine for cutting weld seams and burrs, removing finish blemishes, etc. Light—but rugged . . . and well balanced . . . easily manipulated when arranged as a *swing machine*. It also can be supplied as a *floor stand* or as a *lathe attachment*. Because of its great versatility, the machine has proved its value for "special" applications too—and it may suggest an entirely new application in *your* plant. If so, write us about it—we'll be glad to help you solve the problem and supply the details for efficient production. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U. S. A.

If you write maker identify as IEN - 3779

FLEXIBLE METAL HOSE of 1001 USES...

PRESSURE-SAFE AT 2400 p.s.i.

Titeflex's seamless metal hose, Uniflex, in this application recharges combat planes with oxygen. The job requires a tough flexible hose that is pressure-tight and leak-proof, withstands corrosion and vibration. For YOU, one of the many ranges of Titeflex hose can easily handle steam, gases, fuel, lubricants, air, water, many acids. Find out how Titeflex can solve your problem.

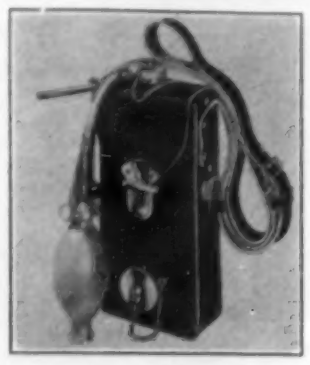
Titeflex

TITEFLEX, INC.
506 Frelinghuysen Ave., Newark 5, N.J.
Please let me have more information about TITEFLEX® Helically Wound Flexible Metal Hose and its uses.
Name _____
Title _____
Firm _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 3780

TESTING . . Optical instrument reads methane content in atmosphere

Source: NATIONAL MINE SERVICE CO.
Box 32, Dept. IEN, Beckley, W. Va.



No combustion

The company announces its appointment as exclusive distributor in the United States for the Riken methane indicator. The instrument has been approved by U. S. Bureau of Mines as a means to read content of methane gas in the atmosphere to a maximum of 6 per cent. The instrument weighs 2½ pounds. It measures 3½ by 1½ by 7½ inches. It is provided with a leather carrying case and shoulder strap.

The mechanism includes a scale, replaceable moisture removing cartridge, a flashlight battery, light and an eye piece lens with which the beam of light is focused on the scale through the atmosphere contained in the housing.

The instrument is set by drawing in a supply of fresh air, using the aspirator bulb that is part of the assembly. The scale is then adjusted to read zero and the instrument is closed and carried to the location suspected of containing methane gas. At this point the aspirator bulb is again operated to replace the fresh air with the atmosphere at the suspected point and a second observation is made through the eye piece. If methane gas is present the light beam will have been deflected to a new position on the scale which reads per cent methane direct.

If you write maker identify as IEN - 3781

CORROSION PROOFING . . Cement to lay up acid resistant brick and tile

Source: CEILCOTE COMPANY
4855 Ridge Road, Dept. IEN, Cleveland 9, Ohio

Company supplies mixing instructions

Corobond is a new synthetic resinous bonding cement that is resistant to attack by acids, alkalis, solvents. It contains a mixture of acid hardeners that act on a delayed reaction to slow the initial hardening and permit pot life sufficiently long so large batches can be mixed. Final cure proceeds rapidly, after it has started, to permit continuous laying up without extrusion of the cement from the bottom courses.

Hardening is completed with negligible shrinkage to a dense structure with excellent mechanical strength. The material spreads easily and evenly to produce a tight joint without excessive pressure. Bricks or tile will not slip or slide. The extruded cement can be sliced off to leave clean surfaces.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3782

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins, for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V-s for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works**, 26 Hancock Street, Quincy, Mass.

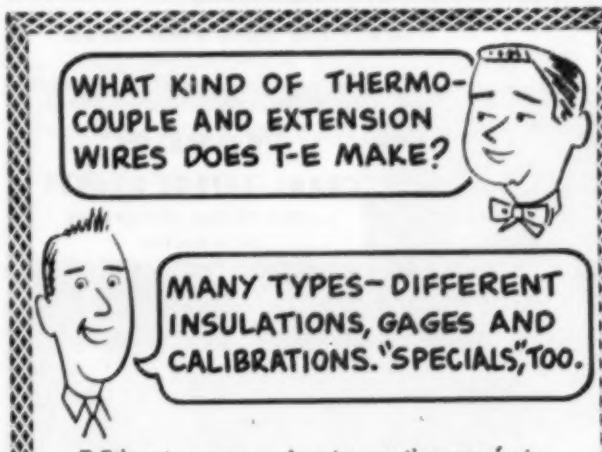
If you write maker identify as IEN - 3783

FOR BETTER HANDLING

Look under "Trucks" or "Casters" in your classified phone directory for your nearest Nutting representative. Or write direct for Junior Catalog 54G.

SINCE 1891 **Nutting** TRUCK & CASTER CO.
2015 Division St. Faribault, Minn.
Export Sales Representative School International Inc.
4237 North Lincoln Avenue • Chicago 18, Ill.

If you write maker identify as IEN - 3784



T-E has too many wires to mention comfortably in one ad. However, in T-E's Wire Bulletin, you can see insulated wires, their gages and calibrations, as well as charts showing calibration symbols, color codes and insulation characteristics. Also included is useful engineering data such as wire resistances, weights, electrical properties, and conduit capacities. Write for your copy—it will help you select the wire you need. Ask for Bulletin 31-Q.

Thermo Electric Co., Inc.
SADDLE RIVER TOWNSHIP, Rochelle Park P.O., NEW JERSEY
CANADA • THERMO ELECTRIC (Canada) Ltd., BRAMPTON, ONT.

If you write maker identify as IEN - 3785

aluminum WOOD SCREWS

In All Standard Sizes
Phillips or Slotted
Flat • Round • Oval

Corrosion Resistant
Lasting Beauty

Packed for Protection
Shipped in indestructible cans with sealed locking tops

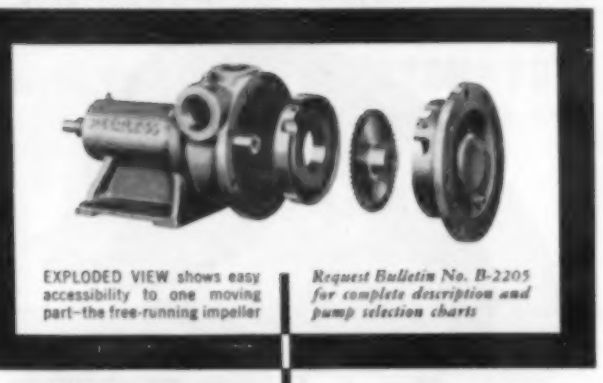
Lubricated Free
Southern Screws in bulk Lubricated free upon request

Shipped Promptly
"Special" screws may be standard in the 600,000,000 Steel, Brass, Silicon Bronze, Aluminum, and Stainless Steel Wood Screws awaiting you at Southern

Write us your requirements
Samples and catalogue upon request, Box 68-E

SOUTHERN SCREW COMPANY
STATESVILLE, NORTH CAROLINA • *Manufacturer of Wood Screws*
FACTORY WAREHOUSES:
North Bergen, N. J. • Los Angeles 23, Calif. • Chicago 10, Ill.

If you write maker identify as IEN - 3786



EXPLODED VIEW shows easy accessibility to one moving part—the free-running impeller

Request Bulletin No. B-2205 for complete description and pump selection charts

VANE TYPE TURBINE PUMPS

FOR BOILER FEED & LP GAS TRANSFER

Face-Mount and Flexible-Coupled Types

For pumping hot and cold, clear and vaporous liquids. Standard and self-priming models for pumping capacities up to 58 gpm and against heads up to 800 ft. Used for liquid circulating, transfer and boosting, boiler feed and condensate return service. Easy and economical to apply, operate & maintain.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
301 West Avenue 26
Los Angeles 31, California

New York; Indianapolis; Chicago; St. Louis; Atlanta; Dallas, Plainview and Lubbock, Texas; Los Angeles, Fresno, Calif.; Phoenix; Albuquerque, New Mexico.

If you write maker identify as IEN - 3787

Here's the newest, smallest heavy duty explosion-proof limit switch

Plant operating men who need a precision, heavy-duty limit switch for use in explosive atmospheres will find these new MICRO "ML-E" explosion-proof switches ideal.

Small . . . enclosures are but 6" high . . . they are Underwriters' listed for hazardous atmospheres, Class 1, Groups C and D. Three different types of actuators, easily adjustable make them readily adaptable to all types of machinery and industrial equipment.

These explosion-proof switches are typical of a wide variety of MICRO precision switches for plant use. MICRO switches are available in a wide variety of sizes, shapes, weights, actuators, housings and electrical actuators. Their use as limits, safeties and interlocks makes plant equipment safer, more automatic and more productive.

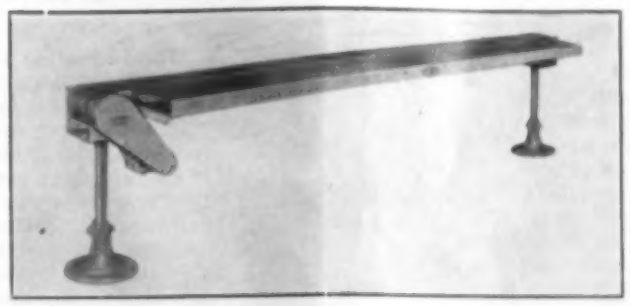
A full line of MICRO switches which have proved valuable in plant installations is carried by 177 authorized MICRO SWITCH distributors in 155 key cities. Look under "Switches, Electric" in your phone book.

MICRO SWITCH
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
FREEPORT, ILLINOIS

If you write maker identify as IEN - 3789

CONVEYING . . Motor-driven belt, 1 to 6 in. on 5-foot table sections

Source: ISLAND EQUIPMENT CORP.
27-01 Bridge Pl. N., Dept. IEN, Long Island City, N. Y.



Bulletins NB1 and UC1

Narrow widths, employing a 1 to 6-in. cotton belt, have been added to the company's motor-driven combination of belt and steel-slider table sections, previously described IEN-536-49. Belt widths of 1, 2 and 3 in. apply on a table measuring 5 in. in width of its center section. Belts measuring 4, 5 and 6 in. in width apply on an 8-in. table.

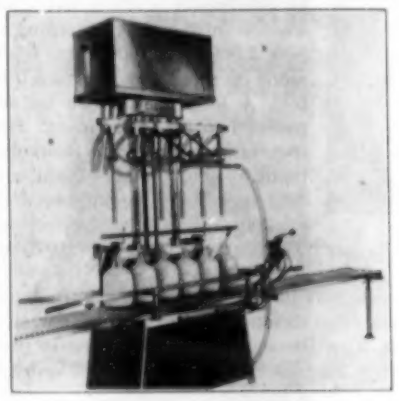
Side leaves can be added to the center unit to extend about 11 in. on one or both sides. These leaves are made of 16-gage steel, the same as the main table. The belt returns beneath the top table surface to ride over a double take-up idler and the motor-driven pulley.

The motor rates ¼ hp. It is geared head design for operation on 110-volt ac. at any one of three fixed belt speeds of 25, 37½ or 50 fpm. Standard height adjustment is between 31 and 37 inches. Any other height can be specified.

If you write maker identify as IEN - 3790

PACKAGING . . Filling machine handles liquid detergents, soap, wax

Source: PACKER MACHINERY CORP.
30 Irving Place, Dept. IEN, New York 3, N. Y.



Available to order

Model SFRT is a new assembly of the company's gravity type pneumatically operated filling machine with a roller conveyor and an elevated supply tank. The machine is employed with the tank for installations in which liquids are pumped from the floor or where the main supply source is located at a height that will create excessive pressure if connected direct. Operation centers at a pneumatic control valve to lower and raise the filling spouts.

The filling action inside a container is from the bottom up to eliminate tendency to foam. Flow is through clear plastic tubing so the liquid can be seen. The machine shuts off when the containers are full. It can be set up for containers holding quarts to 5 gallons. It will handle four 5-gal. units at a time on a one-minute cycle.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3791

THE NEW McDonald SHOK-VEST

provides complete protection for men operating high speed cutting and milling machines

Developed by Lockheed safety engineers, the McDonald Shok-Vest provides complete torso and groin protection—so effectively that even a .38 caliber bullet fired at close range cannot penetrate this laminated glass-cloth vest. The Shok-Vest is light in weight (less than 3 lbs.) and only ⅜" thick. Comfortable to wear—but absolutely does not restrict working freedom. Hinged groin protector allows complete freedom for operator when standing, bending or stooping.

WRITE TODAY FOR BULLETIN AND PRICES

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 3792

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 3793

Now! An Interrupting rating in excess of 100,000 amperes *for every set of fuse clips*

. . . simply by installing FUSETRON *dual-element* FUSES

After years of development work, recent tests verified by the Electrical Testing Laboratories of New York indicate that an interrupting rating of 100,000 ampere for FUSETRON fuses is a conservative one.

On circuits set to deliver in excess of 100,000 ampere, 30 to 600 ampere, 250 and 600 volt FUSETRON fuses on every test cleared the circuit without belching flame or venting hot gases and with comparatively little noise.

No Interference with Time-Lag

Remarkable results have been achieved. Interrupting capacity has been greatly increased while the time-lag characteristics of FUSETRON fuses has in no way been disturbed.

You get ALL THIS ADDED SAFETY without changing a panelboard or switch . . . PLUS the 10 Point Protection of FUSETRON dual-element FUSES.

For safe protection on loads above 600 and up to 5,000 ampere install BUSS Hi-Cap FUSES.

These fuses have unlimited interrupting capacity on circuits of 600 volts or less. Designed to give protection against dangerous overloads as well as excessively high fault current — yet their high speed operation on heavy shorts limits currents to safe values. When coordinated properly with FUSETRON fuses they will not open ahead of the fuse nearest to the fault.

ACTION THAT SAVES YOU MONEY

Delay may cost you far more in losses than replacing every fuse with a FUSETRON dual-element fuse on loads up to 600 amperes — and BUSS Hi-Cap Fuses on loads above that.

For blowing time charts and more information on FUSETRON dual-element Fuses and BUSS Hi-Cap Fuses write for Bulletins FIS and HCS.

BUSSMANN MFG. CO. (Div. McGraw Electric Co.)
University at Jefferson St. Louis 7, Mo.

If you write maker identify as IEN - 3795

A Gear Motor for SMALL APPLICATIONS

Our line of small induction motors is designed for applications where small power can be converted to considerable torque at slow output shaft speed. Hundreds of thousands are in use today for operating relays, vending, amusement, coin operated machines, motion displays, combination rotisserie and broilers, etc.

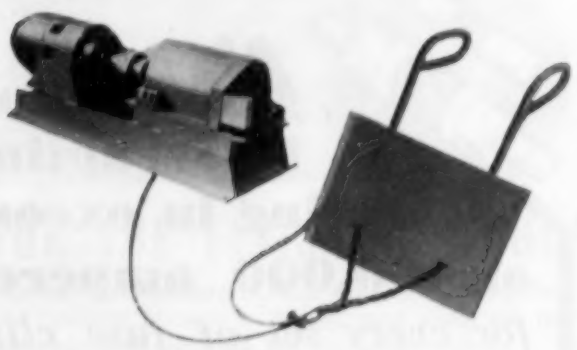
These motors are made in three basic sizes—speeds from 1 to 200 r.p.m. with proportional torque from 5 to 500 in. ounces. Write today for descriptive information, prices and data sheet.

MotoRESEARCH COMPANY
1600 JUNCTION AVENUE
RACINE, WISCONSIN

Designers and Manufacturers of
SPECIAL INDUCTION MOTORS

If you write maker identify as IEN - 3796

JEFFREY POWER SCOOP



For unloading bulk material from box cars, this Power Scoop provides positive control, assures safe operation. It is fully automatic, light in weight, easily moved backward and forward. Drawing shows material being moved to car door for discharging into hopper—or chutes, elevators and conveyors. Write for more information.

THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio

IF IT'S MINED, PROCESSED OR MOVED ...IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

If you write maker identify as IEN - 3797

WIGGINS INST-O-MATIC COUPLINGS

QUICK—DISCONNECT

3000 psi

Manual Quick Disconnect (Push-Pull Positive Action)

Automatic Quick Disconnect (Breaks Away at Pre-determined Weight Load)

for high pressure HYDRAULIC FUEL and PNEUMATIC Systems

SIZES: 1/4" TO 2 1/2"

WRITE FOR FURTHER INFORMATION

Wiggins

E. B. WIGGINS OIL TOOL COMPANY, INC.
3424 East Olympic Boulevard, Los Angeles 23, California

If you write maker identify as IEN - 3798

COMPRESSOR . . Air-cooled design for utility use, pressure to 120 pounds

Source: W. R. BROWN CORPORATION
2701 N. Normandy Ave., Dept. IEN, Chicago 35, Ill.

A little air quickly

Wheel mounting for portable application, or foot mounting for stationary use, can be specified for either of the company's new Hi-Pressure single-cylinder air-cooled motor-driven compressors. One is driven by a ½-hp. and the other by a ½-hp. motor. Both are assembled on 11½-gal. steel tanks equipped with safety valve, drain cock, pressure gage and pressure switch.

The ½-hp. assembly rates 80 to 100 pounds. The ½-hp. unit operates between 90 and 120 pounds. The company is prepared to supply a range of accessories for painting, spraying, tire inflation. List prices for the stationary assemblies are $145 and $164.50.

If you write maker identify as IEN - 3799

TACHOMETER . . Magnetic design, three selective ranges to 50,000 rpm.

Source: CLARENCE J. MARX COMPANY
P. O. Box 4033, Dept. IEN, Cleveland 23, Ohio

Bulletin, "Smiths"

New Smiths tachometer reads within 0.5 per cent in either rotating direction. It can be applied in any position and is equipped with a selector switch for maximum reading at 500, 5,000 or 50,000 rpm. Divisions on the dial read from 0 to 500. A lock button can be depressed to hold a reading. The instrument applies in measurement of shaft, surface and cutting speeds. It is equipped with built-in over-speed protection. Torque requirement is 0.075 oz. in. at 5,000 rpm.

The instrument is packaged in a carrying case with male and female rubber centers, an extension piece, a disc for surface and cutting speeds. The disc can be supplied also to provide a reading in meters. The case measures 4 by 7¼ by 2 inches. Weight is a little over 2 pounds.

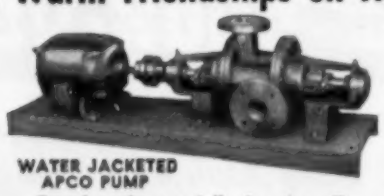
If you write maker identify as IEN - 3800

Masonite perforated panels are now available in black Tempered Presdwood in ⅛ and ¼-in. thicknesses. Standard hook rack dimensions are 20 by 23 inches. The sheet can be ordered in Temprtile scored to form 4-in. squares and painted white as well as black Tempered Presdwood and Tempered Presdwood painted white. Masonite Corp., 111 W. Washington St., Dept. IEN, Chicago 2, Ill., is the maker.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3801

Making Warm Friendships on Hot Jobs



WATER JACKETED APCO PUMP

Developed especially for the efficient handling of high temperature and highly volatile liquids. Delivers outstanding performance. Unbeatable on high head, small capacity duties.

PUMPS "by Aurora" For Every Purpose

APCO Turbine-Type PUMPS
—Ideal for "1001" duties where small capacities and high heads predominate. Get acquainted.

AURORA CENTRIFUGAL PUMPS
are available in many types and sizes—all noted for their streamline coordination between impellers and shells.

We Invite Your Special Pump Problems

Write for CONDENSED CATALOG "M"

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS

AURORA PUMP COMPANY
DIVISION OF THE NEW YORK AIR BRAKE COMPANY
52 Loucks Street • Aurora, Illinois

If you write maker identify as IEN - 3802

HOBBS TANGLE-PROOF LOCK WASHERS

You can *depend* on Hobbs spring lock washers to meet all job requirements and government specifications. Available in high carbon steel, stainless steels, silicon and phosphor bronze, and all types of platings.

HOBBS COTTER PINS are available in steel, brass, stainless steel, and monel in extended prong (Loxit) and hammer-lock (HobLok) types. HobLok cotter pins lock themselves when hit with hammer!

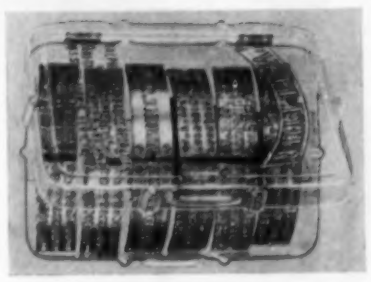
Write now for Hobbs lock washer and cotter pin price lists!

HOBBS MANUFACTURING CO.
Fastener Division
40 SALISBURY ST., WORCESTER 5, MASS.

If you write maker identify as IEN - 3803

THE RIGHT BOX CAN DO A JOB FOR YOU

Special Equipment housed for protection, cleanliness, ease of transportation plus visual transparency—with Lite-TUFF PLASTIC BOXES



Lite-TUFF Standard Boxes and Containers of Non-Flam* lightweight plastic made of approved material are no fire hazard. They are available in a wide variety of compartment arrangements. LOW DIE COST ON CUSTOM MADE.

- Very tough—will not crack or shatter in normal use.
- Stainless steel hinges.
- Resistant to most chemicals—samples supplied for tests.
- May be beautifully heat embossed.
- All transparent or color combinations.
- Make your own compartment layout on our PLOT PLAN Sheets.
- State your problem—let us solve it.

Full information and Plot Plan Sheets sent upon request . . . Dept. A3
*Reg. U. S. Pat. Off.

SHOE FORM CO. INC., Auburn, N. Y.

If you write maker identify as IEN - 3804

TO CUT COSTS....

DON'T HAUL LIQUIDS....

PUMP THEM FAST

with a VIKING ROTARY PUMP

Whether your liquids are so thick they don't want to flow, or so thin they have to be kept in a closed system to keep from gasifying there's a Viking built in the size and type to fit YOUR needs.

½ to 1050 gallons per minute capacity range.

Over 600 cataloged models.

Thousands of special designs.

50 pounds maximum pressure per square inch on standard models.

250 pounds maximum pressure per square inch on heavy-duty models.

500 pounds maximum pressure per square inch on hydraulic oils.

All types of drive arrangement.

VIKING AN HONORED NAME IN PUMPING

Get complete facts from your nearest Viking distributor or send for bulletin 54SF today.

See Our Catalog in Sweet's

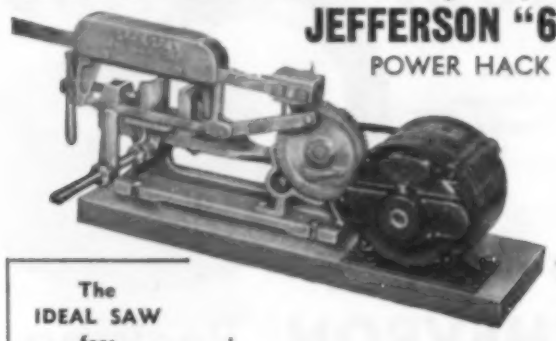
VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 3805

The Little Saw with the Big Capacity

JEFFERSON "601"

POWER HACK SAW



The IDEAL SAW for:

- Machine Shops
- Welding Shops
- Implement Shops
- Garages
- Hobby Shops
- Blacksmiths
- Service Stations
- Plumbers
- Electricians
- Farmers
- Steamfitters
- Maintenance Men

THE LARGE VARIETY OF USES PUTS THIS HANDY SAW IN BIG DEMAND GROUP

This little saw does a truly big job with precision accuracy and dependability. It cuts all metals including steel, brass and aluminum. It will handle up to 3½" x 3½" stock — square, round or pipe. Standard equipment includes a swivel vise which mitres up to 45°, and a sturdy gauge bar for uniform length of cut stock.

. . . and, IT SELLS FOR ONLY including motor, F.O.B. Eau Claire, Wisconsin. **$71.50**

Write today and let us send you complete information and details.

Sales Service Machine Tool Co. SSMT

PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS

2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN - 3806

DIAPHRAGM OPERATED CONTROL VALVE WITH

Full Port Diameter AND ***4-Position Indexing***

TYPE D-53

- Also applicable wherever desireable to control line flow by use of independent pressure on the diaphragm. Type D-53 is finding wide acceptance in substitution for expensive Solenoid Valves.
- Full port means high capacity. All bronze housing. Renewable chrome plated valve seat and composition seat disc. Neoprene nylon diaphragm. Also available with adjustable maximum and/or minimum flow limit stops.
- For additional information on Type D-53, and other new automatic valves in the Cash-Acme line, write our Engineering Department at the address below. To avoid delay, please include a brief outline of your pressure conditions and requirements.

This new pressure operated valve is offered in two basic types . . . either normally open and *closed* by diaphragm pressure or normally closed, and *opened* by diaphragm pressure. Typical use is on water cooled compressors.

Type D-53 may be used to handle water, air, oil or any non-corrosive fluids. Maximum body pressure 250 psig; diaphragm pressure 300 psig. For maximum hookup flexibility, the diaphragm pressure connection on this new Cash Acme valve may be indexed to any of the following four positions:

1. Over Inlet
2. Over Outlet
3. Right Side
4. Left Side

CASH ACME A. W. CASH VALVE MANUFACTURING CORP.

6612 E. Wabash Avenue Decatur, Illinois

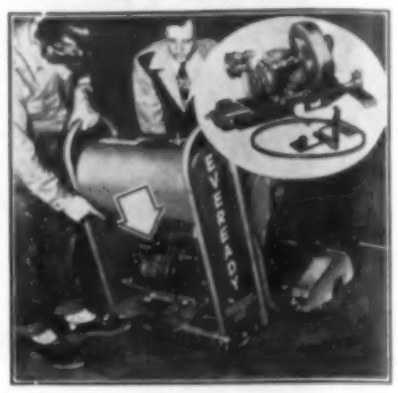
The Complete Cash-Acme Line Includes Pressure Reducing and Regulating Valves, Relief Valves, Back Pressure Valves, Vacuum Regulators and Vacuum Breakers, Differential Pressure Regulators, Strainers, Diaphragm Control Valves.

I—1-54

If you write maker identify as IEN - 3808

CUTTING . . Engine-driven machine operates diamond blade to cut masonry

Source: EVEREADY BRIKSAW CO.
1509 S. Michigan Blvd., Dept. IEN, Chicago 5, Ill.



Also cuts asphalt

Self-propelling action features the company's new Model E-15-PD masonry cutting machine. It represents further development of the machine, previously described IEN-10009-53, in which the operator manually provided the forward movement. The new Powr-Drive mounts at the rear of the machine, in front of the operator where he can engage or disengage it by operating a foot lever control.

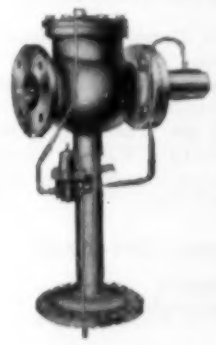
The drive includes a variable speed transmission for adjustment to a maximum of 12 fpm. This transmission is belt connected to the main engine on the machine and is chain connected to two abrasive coated wheels that apply a smooth friction drive to both rear machine wheels. In addition to application on the new machine the transmission is available in kit form for installation on hand propelled machines now in service.

A hydraulic control known as Hydra-Eze lowers the diamond blade gently into the work to avoid shock contact. A hand-operated hydraulic pump lifts the blade from the cut. Floating action prevents binding when the machine is operated over broken or uneven surfaces. The blade shaft is designed to take the blade at either end for right or left hand action in confined locations. A depth control is standard.

If you write maker identify as IEN - 3809

VALVE . . Pressure regulator, pilot-operated for reducing service

Source: KLIPFEL VALVES INC.
1000 Weller Ave., Dept. IEN, Hamilton, Ohio



Valve No. 933

Down-stream pressure is sensed by the diaphragm in the pilot operating valve for this new pressure regulator. Up-stream pressure, through the pilot, is admitted to the main valve, to increase the down-stream pressure, or is released from the main valve if the down-stream pressure is trending too high. The action is without appreciable variation in down-stream pressure.

The valve is available in sizes from ¾ to 6 in. with stainless steel disc and seats in sizes 4 in. and smaller, bronze inner valves and seats in 5 and 6-in. sizes. Stainless steel trim can be supplied to order. Sizes below 2 in. are equipped with bronze bodies. Larger sizes have seim-steel bodies. The balanced diaghragm in the main valve provides positive action without drag.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3810

110 Million Run!

WITH THE *SAME* DICKERMAN FEEDS!

Here are amazing, actual production facts on feeding stock for army rifle clips!

EQUIPMENT:
3 - 105 Ton Ferracute Presses
3 - Dickerman Die Feeds

SPEED:
80 to 85 pieces per minute

PRESS TIME:
Over a year on 3 shifts — 24 hours per day

PRODUCTION:
90,000 pieces per feed, per day
110,000,000 pieces produced to date — with feeds still operating in accurate, serviceable condition!

Die ribbon from one of three 10 station progressive dies. Extreme proving ground accuracy is vital on every press stroke.

These are not claims, they're actual, cold — dollars and cents production facts. On your next punch press job, if production is a factor — if parts cost is a factor — if press speed is a factor — You can't afford not to use a Dickerman Feed!

SEND TODAY for literature and CATALOGS on the complete, dependable line of DICKERMAN FEEDS.

Dickerman

H. E. DICKERMAN MFG. CO.

324 - 319 ALBANY STREET SPRINGFIELD, MASS.

See us at Booth 1742 — ASTE SHOW

If you write maker identify as IEN - 3811

—Wherever you need them!

STACKBIN® sections will give you a stockroom wherever you want it—quickly and easily as building a sectional book case. These patented sectional storage bins nest together without the use of tools—cost you nothing to build, nothing to move. Find out today how STACKBINS can lower YOUR handling costs.

IMMEDIATE SHIPMENT

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM

"Stacked and Still Accessible"

If you write maker identify as IEN - 3812

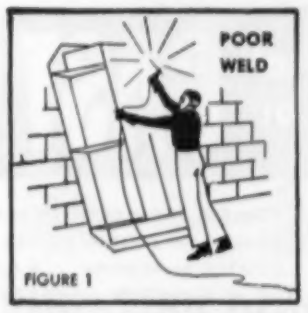


FIGURE 1

FIGURE 2

How Worthington Welding Positioners help your welders produce BETTER WELDS

When your welder has to climb over, prop, or flop the work, he's wasting time and can only obtain good downhand welding over a limited area (Figure 1). With a Worthington Welding Positioner, the work is quickly tilted or rotated automatically into position for correct downhand welding. Write for Bulletin 210D. Worthington Corporation, Positioning Equipment Division, Plainfield, N. J.

Y.2.5

WORTHINGTON

Welding Positioners—Turning Rolls

If you write maker identify as IEN - 3813

FRASSE for *tubing* *Speedy delivery*

from COMPLETE stocks —

For new applications—or for everyday requirements—you'll find it more convenient to order your tubing from Frasse. Complete stocks—over 700 sizes of seamless mechanical tubing alone—permit you to select the sizes best suited to your needs.

Join the hundreds of leading industrial firms that have made Frasse their one dependable source for *everything* in tubing. For quick delivery—for accurate reliable service—as well as suggestions on fabrication, write or call Frasse . . . *the* tubing warehouse.

- SEAMLESS AND WELDED MECHANICAL TUBING
- CENTRIFUGALLY SPUN TUBING
- CONDENSER, HYDRAULIC AND PRESSURE TUBES
- AIRCRAFT TUBING
- STAINLESS TUBING—SEAMLESS AND WELDED
- STAINLESS PIPE, VALVES AND FITTINGS

Peter A. FRASSE and Co., Inc.

17 GRAND STREET, NEW YORK 13, N. Y. • WAlker 5-2200

LYNDHURST • PHILADELPHIA • BUFFALO • SYRACUSE • HARTFORD

If you write maker identify as IEN - 3814

ORDER
JOHNSON UNIVERSAL BRONZE
by Bearing Size

SAVE machine time and money. Johnson Bronze Bars are completely machined—I. D., O. D. and ends . . . with ¼" cut to bring to bearing size. No waste, no defects. Over 350 sizes, inside diameters ½" to 7¾", and outside diameters 1" to 10" in cored bars. Solid bars ⅝" to 8" diameters. All 13" lengths. Available from Johnson distributors and warehouses.

JOHNSON BRONZE CO.
476 S. Mill St., New Castle, Pa.

Write for New Catalog

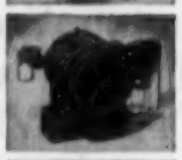
JOHNSON B BEARINGS
Sleeve-Type

If you write maker identify as IEN - 3815

for original equipment vacuum pumps

call on GAST

Motor-Pump Model 0406—To .6 CFM, 25" vac. Wt. 16 lbs., 10¼" long.



V-belt Model 1550-V2—To 10 CFM, 15" vac. For paper feeding, etc.

Heavy-duty, fan-cooled Model 1065-V4-34. To 28" vac. with ½ HP.

Heavy-duty, fan-cooled V-belt Model 2565-V12A. To 21 CFM, 28" vac.

Some accessories standard.

YOU GET HIGH QUALITY that solves product problems with long-lived high performance . . . a result of dependable rotary-vane design plus rigid quality control.

A WIDE CHOICE OF SIZES from five basic types to 24 CFM or 28" vacuum. Some models oilless construction. Our volume sales cut your costs!

YOU GET FULL COOPERATION from Gast engineers backed by over 25 years' experience building vacuum pumps for original equipment. For willing cooperation, call on Gast!

Write GAST—describing your specific application. Request Catalog and "Ideas" Booklet.

see our catalog in PRODUCT DESIGN FILE or write for copy

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 3816

ECONOMICAL!
DUNKING STATIONS

The safe economical solution to your plant smoking problem! Sipco Dunking Stations prevent fires. Cigarettes, cigars, matches, etc. immediately extinguished—no smoldering — no fire hazard! Built specifically for hard industrial use — and abuse — will last a lifetime.

Unit No. 1 — Heavy cast aluminum canister, attractive metal sign, upright and heavy weighted base for use on floors, aisles, etc.

Unit No. 2 — Same as Unit No. 1 except without upright and base. Easily mounted on walls, columns and posts.

Unit No. 3 — Canister alone with mounting bracket.

Write now for Illustrated folder which gives complete details.

STANDARD INDUSTRIAL PRODUCTS CO.
Dept. H. 116 South Garfield Ave., Peoria, Ill.

USEFUL INFORMATION

NEWS NOTES

If you write maker identify as IEN - 3817

ALLOYS . . Instruction booklet on use of low-melting alloys in pattern making

Cerro de Pasco Corporation
40 Wall St., Dept. IEN, New York 5, N. Y.

Making duplicate patterns, anchoring patterns in matchplates, core boxes and dryer patterns, producing patterns compensated for shrinkage, are operations for which instructions are given in 8-page Bulletin F-6, "Cerro Alloys in the Pattern Shop." All are based on use of the company's alloys which melt at 158 to 302 deg. F. Spraying is one application method.

If you write maker identify as IEN - 3818

CONVEYING . . Bulletin on belts has detail instructions on selection for elevator service

B. F. Goodrich Company
450 S. Main St., Dept. IEN, Akron 11, Ohio

"Elevator Belting" is new in the company's series of engineering bulletins available on letterhead request. The 28-page publication tells how to select a belt for bucket elevator service, shows sample calculations, lists weights of materials, drive factors, suggested belt types, accessories, buckets. There is a table of elevator-belt troubles and remedies.

If you write maker identify as IEN - 3819

DRIVES . . New house publication reports news concerning company's universal joint

Gear Grinding Machine Co.
3901 Christopher St., Dept. IEN, Detroit 11, Mich.

"Universal Favorite" titles new house publication that will deal with the company's Rzeppa constant-velocity universal shaft joint. Feature story in Vol. 1 No. 1 is about a rolling mill which broke joints regularly until a Rzeppa joint was used. Your name will be added to the mailing list upon request.

If you write maker identify as IEN - 3820

ENGINEERING . . Textbook on mechanics treats statics and strength of materials together

John Wiley & Sons Inc.
440 Fourth Ave., Dept. IEN, New York 16, N. Y.

Integrated presentation is made in new 516-page textbook, "Statics and Strength of Materials," list price $7.50, by R. H. Trathen of Rensselaer Polytechnic Institute. The author stresses balance between mathematical and physical treatment, includes some 500 problems, covers strain-gage measurements as an example.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3821

GEAR PROBLEMS?
Check with-

FAIRFIELD!

If you use gears in the product you make, we believe it will pay you, as it has others, to become acquainted with FAIRFIELD—the place where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY! Fairfield's production facilities are unexcelled for making all kinds of high precision, automotive type gears such as are now finding wide use in all branches of industry: for tractors, trucks, and buses . . . for agricultural implements . . . for construction machinery . . . for machine tools. Ask for latest literature describing Fairfield's facilities. Your inquiry will receive prompt attention.

FAIRFIELD
Manufacturing Co.
2333 S. Concord Road
LAFAYETTE, INDIANA

If you write maker identify as IEN - 3822

Garlock 430 Chevron Packing

Why users prefer
CHEVRON* Packing
FOR RAMS, PLUNGERS, RECIPROCATING RODS

1. Assures a low friction, positive seal
2. Lasts much longer, needs less maintenance than ordinary V-type packing
3. Works efficiently in a *shallow* stuffing box

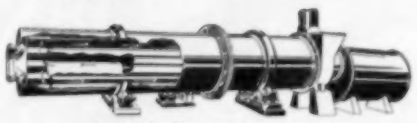
Write today for CHEVRON packing Folder AD-115.

THE GARLOCK PACKING COMPANY
PALMYRA, NEW YORK
Branch offices in most principal cities
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.
*Registered Trademark

GARLOCK

If you write maker identify as IEN - 3823

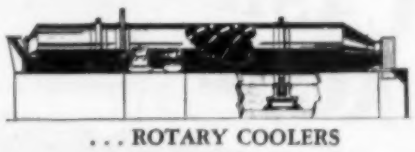
Ruggles—Coles . . .



. . . DOUBLE SHELL DRYERS

. . . SINGLE SHELL DRYERS

. . . ROTARY KILNS



. . . ROTARY COOLERS

Ask for Bulletin 16-D-38 which describes the entire Ruggles-Coles line

HARDINGE
COMPANY, INCORPORATED

YORK, PENNSYLVANIA · 240 Arch St. · Main Office and Works
New York · Toronto · Chicago · Hibbing · Houston · Salt Lake City · San Francisco

If you write maker identify as IEN - 3824

SIMONDS ABRASIVE CO.

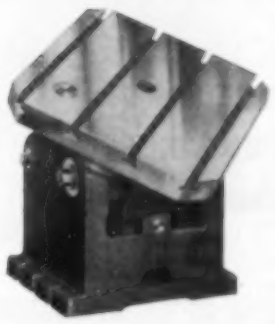
Plate Mounted Wheels . . *save money* in Carbide Tool Grinding

Less costly than diamond wheels! Especially efficient for roughing, semi-finishing and, frequently, finishing, too! Made to high standards of accuracy. Grind fast and cool. Made to fit all leading makes of grinders. Prompt delivery from stock. Write for bulletin ESA-181.

SIMONDS ABRASIVE COMPANY
PHILADELPHIA 37, PA.
Div. of Simonds Saw and Steel Co.
DISTRIBUTORS IN PRINCIPAL CITIES
BRANCH WAREHOUSES: Boston, Detroit, Chicago, Portland, San Francisco

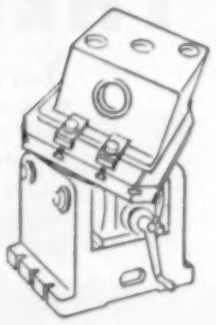
If you write maker identify as IEN - 3825

universal tables



save up to 50% of set up time on radials and boring mills

With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four ¾" tee slots. Write for Bulletin 850.



THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 3826

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Distributors in principal cities

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 3828

FORMING . . New house publication describes production of metal parts by stretch forming

Cyril Bath Co.
32338 Aurora Road, Dept. IEN, Solon, Ohio

Problem and solution method is employed in new "Design Engineers Bulletin" to describe production of a metal part by stretch forming. Issue No. 1 tells how two bends were made in a Y-section part 130 in. long in half the time of previous production methods. Your name will be added to the mailing list to receive this and future issues.

If you write maker identify as IEN - 3829

GAGES . . Catalog on precision fixed gages describes the meaning of tolerances, wear allowance

H. C. Clatfelter Company
21810 Wyoming Ave., Dept. IEN, Oak Park 37, Mich.

Work tolerances, gage tolerances, allocation of gage tolerances, wear allowances, gaging policy, suggestions on gage care, are covered in new 24-page Catalog 54. Balance of the catalog describes Micro-Lap plug gages, ring gages, setting discs, gaging fixtures, with list prices on standard units.

If you write maker identify as IEN - 3830

GAGES . . Technical paper reprint describes pneumatic dimensional gages and how they work

Sheffield Corporation
721 Springfield Ave., Dept. 516, Dayton 1, Ohio

Louis Polk, company's president, presented a technical paper at the International Conference on Engineering Dimensional Metrology in England last October. It is offered on request as 24-page "Review of Pneumatic Dimensional Gages." It describes back-pressure, flow, differential types of pneumatic gages, gaging elements and how they work, instruments, automatic gages and their applications.

If you write maker identify as IEN - 3831

GRINDING . . House publication article suggests trying new type of wheel on surface work

Norton Company
36 New Bond St., Dept. IEN, Worcester 6, Mass.

First article in Vol. No. 44 No. 11 issue of "Grits and Grinds" describes performance achieved in surface grinding by use of the company's new G-bond vitrified wheel. It covers application to production grinding, surfacing dies, sharpening knives. You can request addition of your name to the list.

If you write maker identify as IEN - 3832

GRINDING . . House publication issue carries an article on how to conserve diamond wheels

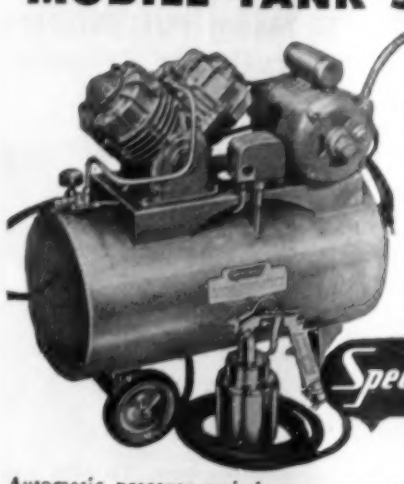
J. K. Smit & Sons Inc.
Dept. IEN, Murray Hill, N. J.

Feature of the Winter 1954 issue of "Diamonds in Industry" is an article written by the company's engineering staff on "Conservation of Diamond Wheels." It tells why diamond wheels fail or char, how to true them on the spindle, why grit size is important, regulation of feed. Your name will be added to the mailing list to receive this and future issues.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3833

NEW! LOW PRICE MOBILE TANK SPRAYER



No. 450 Complete Outfit
$169.00

With rubber tired wheels and rubber pads, internal mix spray gun, tire chuck and air hose.

Speedy Sprayer

Automatic pressure switch starts motor when pressure in tank drops to 30 lbs.—shuts off at 45 lbs. Twin compressor mounted on heavily welded 11½ gal. tank delivers 4 cu. ft. of clean, oil-free air per minute. Equipped with ½ h.p. A.C. motor, factory lubricated. Dozens of handy maintenance and production uses. Ask your mill supply house or write direct for catalog.

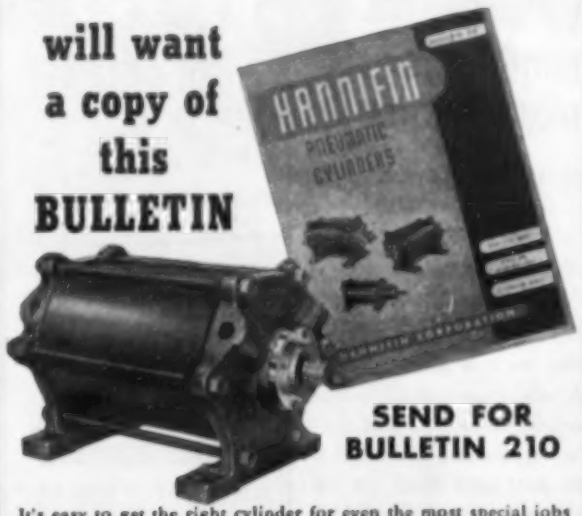
Write today for catalog
Compressors High & Low Pressure
Paint Sprayers
Spray Guns

W. R. BROWN CORP.
2671 N. NORMANDY AVE., CHICAGO 35, ILL.

SPECIALISTS IN PORTABLE SPRAYERS FOR OVER 20 YEARS

If you write maker identify as IEN - 3834

EVERY ENGINEER will want a copy of this BULLETIN

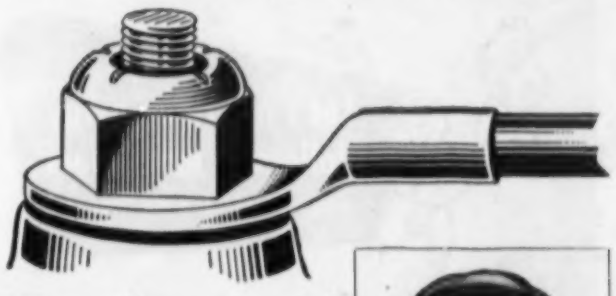


SEND FOR BULLETIN 210

It's easy to get the right cylinder for even the most special jobs when you use Hannifin's big handbook on PNEUMATIC CYLINDERS. 49 pages of helpful specification and engineering data, complete with diagrams and dimensions. The Hannifin line is complete! 6 standard mountings . . . many combination mountings . . . adjustable cushions at either or both ends . . . 2 types of pistons . . . bores to 16". Exclusive construction features assure trouble-free, efficient operation. Send for Bulletin 210. Hannifin also builds custom cylinders in quantity to special design. *Bring us your cylinder problems.*

HANNIFIN
1107 S. Kilbourn Ave., Chicago 24, Ill.
Air and Hydraulic Cylinders • Presses • Air Control Valves

If you write maker identify as IEN - 3835



Vibration-proof electric terminals

Self-locking brass Elastic Stop® nuts provide positive protection against the loosening effects of vibration. The red elastic locking collar provides a constant grip on terminal studs . . . prevents ignition or power supply failures. Because Elastic Stop nuts remain tight in any position on the stud—whether firmly seated or not—they are easily adjusted. One-piece fasteners, readily removed and re-used.

Write ESNA® for the most practical answer to your fastener problem. Address Dept. N57-453.

ESNA

ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Road, Union, N. J.

DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

If you write maker identify as IEN - 3836

new method of **process heating** and **cooling**

*saves 50%

- *in initial cost
- *in heating and cooling time
- *in tank space
- *in maintenance labor

Each member of your buying committee should have this book which tells how Platecoils satisfactorily solve tank heating and cooling problems . . . and at the same time save time, money and manpower.

PLATECOIL REPLACES PIPE COILS

Write for your free copy of Bulletin P56 today!

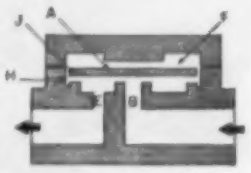
TRANTER MANUFACTURING, INC. • LANSING, MICH.

If you write maker identify as IEN - 3837

NEWLY DESIGNED TRAP

virtually eliminates maintenance!

SARCO
Thermodynamic
TRAP



HOW IT WORKS!

Air and/or condensate raise valve seat disc A, discharge thru E. When steam follows, greater velocity causes it to strike body at H thus building up pressure in chamber F. This causes disc to seat, closing tube B. As pressure in F decreases by condensation and leakage thru slot J, pressure in tube B raises disc and cycle is repeated.

Most striking feature of this trap is its simple design. Only one moving part – a solid stainless steel disc – virtually eliminates maintenance.

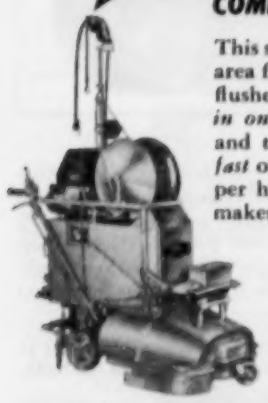
The trap is small, easily installed, immune to water hammer, vibration and corrosive elements. Uses same valve seat and head for all pressures to 600 psi and temperatures to 950°F.

Check these advantages to your own satisfaction. Write today for a free trial trap giving size, capacity and pressure conditions.

SARCO COMPANY, INC.
EMPIRE STATE BLDG., N. Y. 1, N. Y.

If you write maker identify as IEN - 3838

MECHANIZE your floor-cleaning with a COMBINATION SCRUBBER-VAC!



This single unit, *Model 213P* for large-area floors, applies the cleanser, scrubs, flushes if required, and picks up – *all in one operation!* It's *self-propelled*, and there are no switches to set for *fast* or *slow*. Cleans up to 8,750 sq. ft. per hour! 26" brush spread. *Finnell* makes sizes for small, vast, and intermediate operations . . . available on lease or purchase plan. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2604 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.
Originators of Power Scrubbing and Polishing Machines
FINNELL
BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 3839

Before you buy unit heaters... steam, hot water or gas...

SEE MODINE FIRST!

"Modine Steam and Hot Water Units assure perfect heating comfort at low overall cost."

"Modine Gas-Fired Units are only half the weight, half the size of the average of 7 other leading makes."

You're ahead two ways when you buy Modine. First, Modine builds both steam and gase-fired unit heaters, thus offers you an unbiased recommendation. Even more important, whichever Modine Unit Heater fits your needs, you can be sure of unequalled performance. Ask for Bulletin 153 on steam and hot water and Bulletin 653 on gas units. Modine Mfg. Co., 1503 DeKoven Ave., Racine, Wis.

U-1219

Modine UNIT HEATERS

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 3840

BUILDINGS . . Motion picture shows construction of aluminum sheathed building

Aluminum Co. of America
1501 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

Step by step progress is traced in construction of the company's own building in new 28-min. 16-mm. color motion picture, "Aluminum on the Skyline." It shows how aluminum curtain wall panels were assembled on the 30-story steel-frame building and how aluminum is employed for windows, radiant-heating ceiling, plumbing, wiring, hardware, trim.

If you write maker identify as IEN - 3841

GRINDING . . Color sound movie on the surface grinder and on the work it can do

DoAll Company
254 N. Laurel Ave., Dept. IEN, Des Plaines, Ill.

"Techniques of Surface Grinding" is new 16-mm. 31-min. color sound motion picture available on loan. It states desirable features of a surface-grinding machine, shows how design and construction meet these requirements, how the machine is used to do a variety of work, how it perform in automatic operations on jet engine parts, pump vanes, watch jewels.

If you write maker identify as IEN - 3842

MANAGEMENT . . Proposals for tax revision published in 28-page booklet to keep you informed

National Machine Tool Builders Association
10525 Carnegie Ave., Dept. IEN, Cleveland 6, Ohio

Recommendations on tax revision made by the industry have been collected and published in booklet form with the title, "Proposals for Tax Revision." Some of them are alleviation of double taxation for dividends, optional depreciation, research and development expenditures, Section 102.

If you write maker identify as IEN - 3843

TESTING . . Color sound film shows how the Reflectoscope finds flaws in metals

Sperry Products Inc.
1000 Shelter Rock Road, Dept. IEN, Danbury, Conn.

"Ultrasonic Inspection" is new 16-mm. 10-min. sound color motion picture on development, theory, operation and application of the company's Ultrasonic Reflectoscope. The film shows how the instrument detects and locates flaws in raw material, finished parts, plant equipment. It also shows how SIMAC equipment inspects metal parts automatically, records results.

If you write maker identify as IEN - 3844

WELDING . . Color sound film shows recent developments in arc and torch welding

Eutectic Welding Alloys Corp.
40-40 172nd St., Dept. IEN, Flushing 58, N. Y.

"New Welding Procedures" is new 19-min. motion picture intended to bring you up to date on welding electrode and rod developments. It shows how chamfering, cutting and grooving can be done without dismantling equipment when making repairs. It also shows use of a new electrode to burn a hole through rock and concrete. It is available on loan to technical groups, schools and colleges, industrial plants.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3845

FOR PRACTICAL ACTION

FREE Fact Sheet Shows How to Mount FULLERGRIPT Power Brush for Conveyor Cleaning

Many users of conveyors are cutting operating costs by the installation of a Fullergript brush to clean dirt and product accumulations from the belt. To help you we have prepared a sheet with sketches showing how to hitch up and install different types of Fullergript power brushes. A copy will be sent upon request. Simply write to . . .

INDUSTRIAL Fuller BRUSH CO. DIVISION

3583 MAIN STREET • HARTFORD 2, CONNECTICUT

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

If you write maker identify as IEN - 3846

IF

You Machine Irregular or Delicate Parts and must make special chuck jaws

THEN

You can save Time and Money when making work holding tools for small parts of square, rectangular or irregular section.

Cerromatrix Speed Chucks and Nests for Drill Jigs are made in a jiffy with almost no machining.

Be prepared for the next tough chucking problem. Write at once for Bulletin B5 to get full details.

CERRO DE PASCO CORPORATION
Dept. 6, 40 Wall St., New York 5, N. Y.
See Our Exhibit ASTE Exposition Philadelphia, April 26-30 incl.

If you write maker identify as IEN - 3847

Your Costs Will Slide Down Too

Although the PEDRICK PRODUCTION BENDER shown is bending two "D" sections simultaneously for sliding board rails—the same machine is used for bending pipes, tubes, reinforcing bars and structural shapes, by merely changing the die on the central spindle. Most bends can be made in multiple. The automatic duplicate bending feature, included on all models, greatly increases accuracy and production.

Write For Descriptive Folder, Dept. 7

VISIT OUR BOOTH NO. 1442 AT THE PHILADELPHIA A. S. T. E. SHOW APRIL 26 TO 30, 1954

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St. Philadelphia 40, Pa.

If you write maker identify as IEN - 3848

Masonite Presdwood® can help you design better products easier. New booklet tells how and where to use these durable, grainless, all-wood panels. Describes, gives engineering data about the 44 types and thicknesses of this versatile hardboard material. Send for your free copy now!

PRESDWOOD WOOD MADE BETTER

NATURALLY STRONGER WITH LIGNIN
MASONITE® CORPORATION
Dept. IEN-4, Box 777, Chicago 90, Illinois

"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as **IEN - 3849**

Latest data from Western Precipitation on Cottrell Recovery Equipment!

Do you have operations in your plant where gas-laden suspensions, wet or dry, are a problem? Such suspensions may be falling on surrounding property, causing nuisance difficulties. Or perhaps important values are being lost that can be profitably recovered.

Whatever the nature of *your* recovery requirements, you will find this 40 page Cottrell booklet of great help. It contains up-to-date data on the latest advancements in Cottrell recovery methods — prepared by the organization that pioneered commercial application of Cottrell Electrical Precipitators almost a half century ago and has consistently led in new Cottrell developments.

40 PAGES of helpful information

on Recovering Dusts, Fly Ash, Mists, Fumes and other Suspensions from Stack Gases

This booklet summarizes such important data as . . .

- Basic types of Cottrell equipment.
- Various types of Collecting Electrodes.
- Various Shell Constructions.
- Data on CMP Units.

. . . and many other helpful facts.

This data-packed booklet is free. Ask for Bulletin C103R.

WESTERN Precipitation CORPORATION

DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1409 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as **IEN - 3850**

Production
Soldering
BETTER JOBS FASTER
more
Economically

Complete with Fixtures and Conveyer

Save Labor, Solder... Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form . . . faster, cleaner . . . to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work . . . gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

Write today for new MOGUL SOLDERING GUN bulletin

METALLIZING COMPANY OF AMERICA

Dept. IEN
3520 W. Carroll Avenue, Chicago 24, Ill.
Telephone: SAcramento 2-3710

If you write maker identify as **IEN - 3852**

CAULKING . . Pneumatic gun directs flow of sealing material

Source: BINKS MFG. CO.
3122 Carroll Ave., Dept. IEN, Chicago 12, Ill.

For a clean, neat job

Asphalt, rubber cement and similar heavy materials are delivered by pressure from a container through a hose to this new Model-31 flow gun. Flow is controlled by depressing a lever and the gun is employed to direct the flow into a crack, under a gasket or molding, into corners and crevices that require sealing. The gun is available with 16 interchangeable nozzles providing orifices of various shapes and sizes. A special Model 31V applies abrasive materials.

If you write maker identify as **IEN - 3853**

WELDING . . Arc electrode with coating that contains iron powder

Source: GENERAL ELECTRIC CO.
Dept. 6X-701, Schenectady 5, N. Y.

Holds own arc length

Rutile type covering, containing iron powder, permits application of this new arc electrode in actual contact between the coating and the work. The arc is maintained in a crater that forms inside the coating. Thus the operator does not have to maintain the arc length himself.

The electrode is particularly suited for use on mild and medium carbon steel in welding machinery, low pressure storage tanks, light structural work in AWS Classes E-6012 and 6020. Horizontal and flat position fillets, laps, single and multiple pass butts, deep grooves and cover passes, as well as multiple pass butt welds, can be made with negligible spatter. Weld slag can be removed by light tapping.

If you write maker identify as **IEN - 3854**

HOIST . . Hand chain unit is non-magnetic and spark resistant

Source: AMPCO METAL INC.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

Rates 1 ton

Ampco copper base alloys are employed in the construction of this new hoist except for a few non-metallic parts and ball bearings made of Monel Metal. The hoist chain is proof tested at 2 ton and the hoist itself is tested for satisfactory operation to 50 per cent over its rated 1-ton capacity. The unit is designed for application in hazardous areas where a spark might cause an explosion or where corrosion can result from direct contact with liquid or fumes. This type of hoist is specified by the Navy for minesweeper service.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3855**

PREVENT BURNS!

SWIVELIER *Adjustable*
COOLITES
STAY COOL
Using 100-Watt Lamp

"NEVER GETS TOO HOT TO HANDLE"

FOR USE ON:
- lathes
- millers
- drill presses
- other machine tools
- assembly benches
- inspection tables
- desks
- drafting boards
- business machines

• ALL WIRES ENCLOSED

UNIVERSALLY ADJUSTABLE

• For full details on Coolites, fluorescent and incandescent "Dextra-Lites" and other fine Swivelier Industrial Lighting Units

Write: Dept. 1E4 for Bulletin 134.

SWIVELIER COMPANY, Inc.
43—34th St., Brooklyn 32, N. Y.
Showroom: 30 Irving Place, New York, N. Y.

If you write maker identify as **IEN - 3856**

A major advance in fork truck design. Mercury "Yak" 430 incorporates...higher maximum fork elevation • increased free lift • greater speed • lighter chassis weight • shorter turning radius • simple *low pressure* hydraulic hoist system • new unit drive with quick detachable motor and self-energizing hydraulic brakes • new compensating castor type steering axle • Timken duo-grip parking brake actuated by driver's seat.

MERCURY MANUFACTURING CO.
4132 S. Halstead Street, Chicago 9, Illinois

If you write maker identify as **IEN - 3857**

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

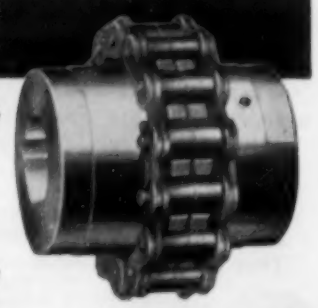
If you write maker identify as **IEN - 3858**

Only LINK-BELT "RC" Flexible Couplings give all 3 advantages at low cost

1 Equalized load

2 Proper balance at high speeds

3 Effective compensation for end float and misalignment



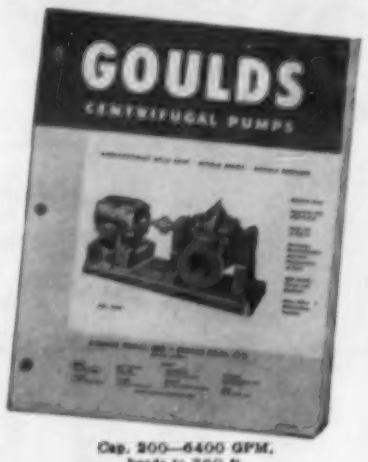
Link-Belt's exclusive design makes the difference. The simplicity of single-width chain is combined with divided rollers to give you top performance—plus economy. Specify Link-Belt Roller Chain Couplings for any rating from fractional to 1000 hp. Get all the facts from your Link-Belt representative or distributor, or write for Folder 2363. 13.210

LINK-BELT
"RC" Flexible Couplings

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (S. Africa), Sydney (Australia). Sales Offices, Factory Branch Stores, Distributors in Principal Cities.

If you write maker identify as IEN - 3859

12 pages of facts about a NEW LINE of 19 pumps



Cap. 200—6400 GPM, heads to 260 ft.

Here's good news for pump buyers. The new Goulds Bulletin No. 721.6 gives you a host of information on the *extra* design features that are *standard* on Goulds new Fig. 3405 pumps.

Included are stuffing box bushings, steel-impeller keys, Teflon water seal rings — to mention a few.

This pump construction requires only three shaft and rotating parts assemblies (exclusive of wearing rings and impellers) to provide for 19 pump sizes.

But, get all the facts on how you can save on down time, maintenance costs and spare parts inventories. Write for Bulletin 721.6 today.

Goulds PUMPS INC. Seneca Falls New York

If you write maker identify as IEN - 3860

"MULTI-INSULATION" is the secret of...

HUPPERT Floor Model FURNACES

These sturdy production type Huppert electric furnaces not only attain highest efficiency, but also cut operating costs to a minimum through the unique Huppert method of using multi-insulation surrounding all sides of the heating chamber. Heat range — continuous up to 1850° F., intermittent operation to 1950° F., can also be built for 2300°F. operation. This furnace comes complete with an indicating electronic temperature controller, and a tight seating, wedge-type door is used. Standardly furnished for 220 V. AC. single or 3 phase operation. (110 V. or 440 V. models to order.)

This model built in 20 different sizes
Model No. 16 illustrated
12" x 8" x 18"—$925.00 complete

Write for literature on complete line of Huppert furnaces and ovens.

K. H. HUPPERT COMPANY
6856 Cottage Grove Avenue, Chicago 37, Illinois
Manufacturers of Electric Furnaces and Ovens

If you write maker identify as IEN - 3861

use AVERY Kum Klean LABELS

- REDUCE LABELING COSTS
- ELIMINATE WASTE MOTION
- SPEED ASSEMBLY OPERATIONS

Because Avery labels are pressure sensitive, they're the fastest, easiest and most economical labels you can use...for nameplates and trademarks, for guarantees and instructions—for approval seals, diagrams and many, many other uses.

They can be supplied in any size, shape or color...on backing tape in roll or sheet form...to meet your own specific labeling requirements.

With Avery electric dispensers labeling is as much as 5 times faster than with ordinary methods!

You can save time and money by using these labels in YOUR business. Clip the coupon for FREE samples.

AVERY ADHESIVE LABEL CORP., DIV. 103
117 Liberty St., New York 6 — 608 S. Dearborn St., Chicago 5
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☐ Send us case histories & free samples
☐ Tell us about your dispensers
☐ Have the Avery Label Man call

Name
Company
Address
Our business is:

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 3862

MOTORS . . Tables show the difference between new and old NEMA electric motor frame sizes

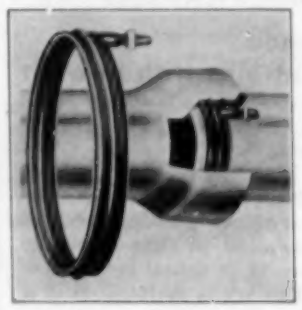
Century Electric Co.
1806 Pine St., Dept. IEN, St. Louis 3, Mo.

Bulletin 1676 is a 6-page comparison of NEMA frame sizes for electric motors of 1 to 30 hp. Tables show new sizes and old against hp. rating and speed to emphasize how improved materials and design methods have made possible more power in a smaller frame. Drawings and tables show the difference.

If you write maker identify as IEN - 3863

PIPE . . New gasket for clay pipe joint is inflated with grout and sealed to set tight

Clay Sewer Pipe Association Inc.
5 E. Long St., Dept. IEN, Columbus 15, Ohio



Pressure Joint is the name of a new assembly method for vitrified clay pipe from 8 to 36 in. in diameter. It is based on a hollow rubber gasket, something like an automobile inner tube, which is placed around the spigot end of one pipe. This end, with the gasket in place, is inserted into the bell end of the adjoining pipe so a filler sleeve extends to the outside. A grout mixture then is pumped into the gasket through the sleeve to fill and expand the gasket uniformly under 50 to 60-lb. pressure, using a hand pump and gage. A metal collar is crimped over the filler sleeve to seal it. The grout sets inside the gasket to form a tight infiltration-proof joint.

If you write maker identify as IEN - 3864

PLANT SITES . . Bulletin provides check list of factors to consider when selecting a plant location

Los Angeles Dept. Water & Power
311 South Spring St., Dept. IEN, Los Angeles 12, Calif.

"How to Pick a Site" is new 8-page bulletin, available on letterhead request, that makes statements on a number of factors involved in selecting a plant location such as financing, water supply, power, sewers, fuel, labor supply. Following each is a question that must be answered by an affirmative or negative. The answers provide an evaluation.

If you write maker identify as IEN - 3865

PLASTICS . . Booklet of instructions on making reinforced plastics with polyester resins

Bakelite Company
30 E. 42nd St., Dept. IEN, New York 17, N. Y.

Formulation, compounding, reinforcing materials, production methods are given in new 20-page Booklet L-10, "Bakelite Polyester Resins for Reinforced Plastics." Instructions cover use of catalysts, accelerators, coloring agents, glass reinforcing materials, mixing equipment, preforming and molding equipment. A feature is the listing of names and addresses of makers for the equipment and materials named in instructions.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3866

AUTOMATIC PROTECTION OR CONTROL for your heating process

...WITH ALNOR PYROTAC

Here's a simple, low-cost way to obtain *AUTOMATIC PROTECTION* against damage due to excessive temperatures . . . safeguard your investment in heating equipment and materials in process. This precision-built instrument constantly indicates temperature of the heated equipment and sounds an alarm and/or shuts down the heated circuit at a safe, pre-set temperature. It may also be used as a *CONTROLLER* on a process requiring shutdown upon reaching a final process temperature—such as ceramic kilns, molds, etc. Automatic thermocouple break protection assures safety if couple or extension wires should break.

Ask your Alnor representative for details on this sturdy, precise instrument. You'll find the price of less than a hundred dollars unusual for an instrument of this type. Write for bulletin that contains complete description and wiring diagrams of actual applications. Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

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- LUMINOUS
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For timing of production operations, laboratory processes, experiments, or "alerting" to appointments. Imported from Germany! 17 jewel precision timepiece with luminous dial for night use. Alarm is set by turning glass rim. Tone may be adjusted to loud or soft. Watch runs 42 hours on one winding — is shock-proof, anti-magnetic. Money-back guarantee.

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If you write maker identify as IEN - 3870

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Anchoring machinery

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Installing plumbing

Get fast, clean, deep holes, at any angle, in concrete, asphalt, tile, brick, slate, marble, etc.

Carboloy Masonry Drills won't pack or stall. Rotary-drill *any* masonry continuously to any depth. Superhard Carboloy cemented carbide cutting tips assure long drill life. Available separately, or in job-designed kits. Sizes 3/16" through 1½".

For complete information contact your distributor or write —

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DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Street, Detroit 32, Michigan

"Carboloy" is the registered trademark for products of Carboloy Department of General Electric Company.

If you write maker identify as IEN - 3871

Operating over unpaved ground, this TOWMOTOR stacks high, reduces size of storage area for leading manufacturer of concrete pipe.

PIPELINE to PROFITS. You are doing a grand job now, but if you feel there is room for improvement, consider your materials handling. No other operation offers so great an opportunity for saving time, labor, and money! And no other method or machine moves as many tons per dollar as TOWMOTOR Fork Lift Trucks. Whatever you make, warehouse or handle, TOWMOTOR with its dozens of special attachments, its rugged economy, and its operator-ease is today's pipeline to greater profits for the boss. Send for the "Towmotor Portfolio for Operating Men." TOWMOTOR CORPORATION, Div. 2604, 1226 East 152nd Street, Cleveland 10, Ohio.

TOWMOTOR THE ONE-MAN-GANG ®

FORK LIFT TRUCKS and TRACTORS
Since 1919

TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

If you write maker identify as IEN - 3872

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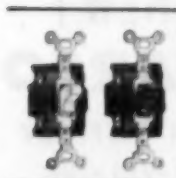
P&S *For Quick Wiring — For Long Life,*



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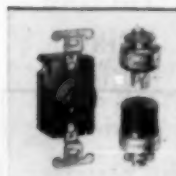
Maximum Service — Quiet Operation — Long Life. Rated 15 and 20 Amp., 120 V. A.C., 277 V. A.C.



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Sturdy—Easy to wire — Modern Design. Connectors, Caps and Receptacles — 10 and 20 Amp., 2, 3 and 4-wire.

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Extra thick bodies — extra heavy metal parts—to stand rough usage. A complete line of 10 and 20 Amp., 2, 3 and 4-wire connectors, caps and receptacles.

For information on complete P&S Line, send for Catalog No. 49. Specify P&S by catalog number.

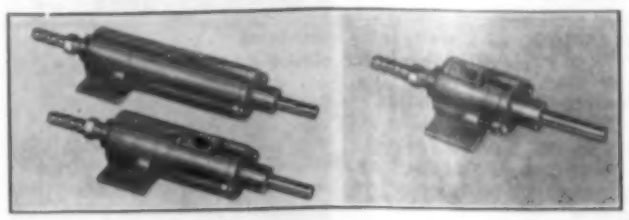
Department IN

PASS & SEYMOUR, INC.
SYRACUSE 9, NEW YORK
Offices: 71 Murray St., New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

If you write maker identify as IEN - 3873

CLAMP . . Pneumatic design for jigs, fixtures, 1, 2, 3-in. stroke

Source: MEAD SPECIALTIES CO.
4114 N. Knox Ave., Dept. IEN, Chicago 41, Ill.



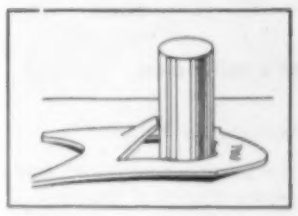
Foot mounting design

Type H-1-X Midget designates a new single-acting spring return cylinder type clamp with 1-in. bore. The new unit supplements the Types H-1 and V-1 with their ⅝-in. stroke. Each unit is equipped with a mounting base and hose fitting at the air input end. Each can be taken apart and reassembled after removing and replacing two screws.

If you write maker identify as IEN - 3874

FASTENING . . Spring steel clip grips threaded stud when pressed on

Source: PALNUT COMPANY
61 Cordier St., Dept. IEN, Irvington 11, N. J.



Sample on request

Three sizes apply on plain studs or unthreaded rods measuring 3/32, ⅛ and 5/16 in. in this new Type-F Pushnut. The fastening is available in plain steel or with Parkerized or cadmium finish. It slips easily over an unthreaded stud or rod and locks tightly, following a quick push with an applicator. It is particularly suited to secure name plates, molding and other light parts in place.

If you write maker identify as IEN - 3875

TRUCK . . Four-wheel trailer operates with a dragline conveyor

Source: MERCURY MFG. CO.
4044 S. Halsted St., Dept. IEN, Chicago 9, Ill.

Note towing hook

Load capacity is 2 ton for this new 3 by 6-ft. caster steer trailer. It is fitted with a hard wood deck and has stake pockets on both sides and rear. A permanent structural steel rack, at the caster end, is fitted with a V-type tow chain and hook, including shock absorber springs, for attachment to a dragline conveyor assembled overhead. A cross bar serves as a steering handle when the trailer is being moved manually.

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If you write maker identify as IEN - 3876

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Udylite Handiplater

Here's a compact unit with compound uses. This small-size portable plater eliminates need for tying up full-size equipment with small jobs. Simply plug Handiplater in, pour in some of the solution dipped from your regular tank, and it will start saving you dollars as it efficiently plates the work.

Order today or write Udylite for more information.

- **Removable, Kroseal lined, all-steel tub—½ pack capacity.**
- **Easily changed anode assembly for acid or alkaline solutions.**
- **Economical • Efficient • Convenient • Compact.**

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DETROIT 16, MICHIGAN

THE Udylite CORPORATION

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WIDE-BASE design is the key to every wanted feature for more profitable material handling

SAVE TIME • MONEY • LABOR

- *MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS*
- *CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE*
- *SAVE HIGH COST FLOORS AND FLOOR SURFACES*
- *SLOW, EVEN WEAR FOR LONG SERVICE*
- *HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND*
- *ROLLS EASIER, SMOOTHER OVER ALL SURFACES*

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

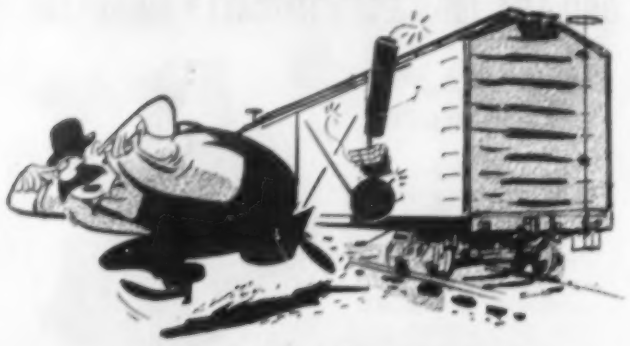
Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. 6

The GENERAL TIRE & RUBBER CO. Akron, O.

If you write maker identify as IEN - 3880



"Fort' of Julee come early this year!"

Why use high-explosive methods to open balky, hard-to-roll boxcar doors? Why endanger lives and limbs? Why waste labor, time and money?

THE NOLAN ONE-MAN CAR DOOR OPENER OPENS ANY BOXCAR DOOR IN 20 SECONDS OR LESS!

A few quick pulls on the anchor chain by one man and the door rolls open. The NOLAN saves its low initial cost in the first hour of operation.

NOLAN ONE-MAN CAR DOOR OPENER

ORDER ONE OR MORE NOW!

Free Literature

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THE NOLAN COMPANY
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If you write maker identify as IEN - 3881

Prints your product as you make it!

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Automatic Precision Printer for all materials processed in roll, sheet or strip form

A compact printing machine designed for easy attachment to existing processing or handling equipment. Automatically prints continuous or repeated designs, trademarks, code-dates, measure marks, other legends on flexible or rigid materials . . . metal, rocklath, rubber, linoleum, screening, woven fabrics, paper, cellophane, board, etc. Uses fast-drying inks of any color, for light and dark surfaces.

ROLAPRINTER descriptive literature sent on request

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If you write maker identify as IEN - 3882

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Workers produce better with less fatigue using ANGLE STEEL shop equipment because it has.. . . Correct heights, smooth surfaces with inclosed backs and ends, rigid stability, scientific bracing, convenient shelves and drawers. Benches are available in various stock styles, heights, widths and lengths with wood or metal tops. Handsome baked enamel finish. Suitable for single unit or continuous bench set-ups.

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SEND FREE Literature . . . we're interested in: .....Benches .....Machine Tender Trucks .....Stools.

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USEFUL INFORMATION
(Continued)

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PLASTICS . . Instructions on machining and fabricating laminated plastic sheet, rod, tube

Formica Company
4620 Spring Grove Ave., Dept. IEN, Cincinnati 32, Ohio

Shearing, sawing, drilling, milling, routing, turning, punching, sanding, postforming are among the operations described in new 12-page "Recommendations for Fabricating Formica." Types of tools and equipment to use, along with names of their manufacturers, are given along with an illustrated setup and notes on satisfactory procedures, speeds, precautions.

If you write maker identify as IEN - 3884

PLASTICS . . Information booklet on materials, production methods and the industry

Society of the Plastics Industry Inc.
67 W. 44th St., Dept. IEN, New York 36, N. Y.

Fifth Edition of "Plastics" is a 40-page booklet intended to bring you up to date on the industry and its activities. It describes size and makeup of the industry, types of plastics with their properties and uses, methods of making products, educational facilities, opportunities in the industry.

If you write maker identify as IEN - 3885

PRESS TOOLS . . Working model of die cushion shows its use on a power press

Dayton Rogers Mfg. Co.
2824 13th Ave., Dept. IEN, Minneapolis 7, Minn.

Offered on request, primarily to trade schools and engineering colleges, is a man-sized plywood-backed drawing of a power press with a working model of the company's pneumatic die cushion mounted in place. Arrows and captions point to principal parts to indicate construction features.

If you write maker identify as IEN - 3886

VACUUM PUMPS . . Maintenance suggestions in pocket bulletin include troubles, causes, remedies

F. J. Stokes Machine Co.
5500 Tabor Road, Dept. IEN, Philadelphia 20, Pa.

Bulletin 755 is a 16-page assembly of practical helpful information on vacuum pumps. It carries the title, "How to Care for Your Vacuum Pump." A diagram shows how a rotary vacuum pump operates. Instructions tell how to start the pump, how to stop it, causes and remedies of specific troubles. There is a list of 25 do's and don'ts.

If you write maker identify as IEN - 3887

SAWING . . Pocket instruction booklet on selection and use of hacksaw and bandsaw blades

Victor Saw Works Inc.
Dept. IEN, Middletown, N. Y.

Right and wrong pictures illustrate instructions in new 28-page Booklet 121-V-12 on correct use of hand hacksaw blades, power hacksaw blades, bandsaw blades. There is a list of trouble causes and remedies, suggestions on use and care, types and cutting speeds for bandsaw blades.

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If you write maker identify as IEN - 3888

STURTEVANT Laboratory Equipment . . .

assures accurate samples . . . cuts laboratory sampling costs

Sturtevant laboratory equipment have all the features of full-sized production machines with extra accuracy and wider range of adjustment built-in. They are fast . . . provide true samples of every batch processed.

Investigate Sturtevant equipment for your laboratories. They will help you cut sampling costs . . . improve product quality . . . increase sales. Write for catalog, today.

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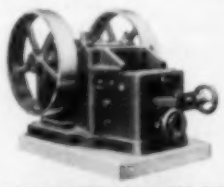
Capable of reducing soft, moderately hard and tough or fibrous materials to any degree of fineness between 1 in. and 20 mesh. The patented "Open-Door" feature permits ready accessibility for cleaning.



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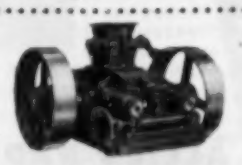

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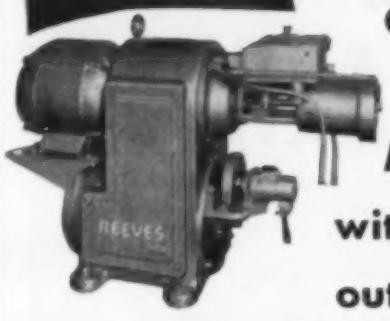
Sturtevant Mill Company, 113 Clayton St., Boston 22, Mass.

If you write maker identify as IEN - 3889

NEW!



REEVES Automatic Controls! ...including Auto-Pneumatic with linear output speeds!

● For automatically controlling liquid levels in tanks, maintaining constant temperatures, pressure, and other variables, and monitoring flow systems of liquids, gases or chemicals.

REEVES new Auto-Pneumatic control with linear output speeds is but one of a complete line of controls designed and engineered to operate your machines more efficiently, more profitably, *automatically.* Send today for your copy of REEVES new Automatic Production Control Booklet. Specify IN2b-G.

FREE!
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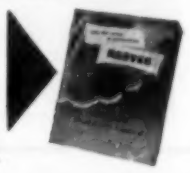

REEVES PULLEY COMPANY • COLUMBUS, IND.

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don't discard dirty, worn-out work gloves...

Before

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LET ARBILL MAKE THEM LIKE NEW!

We clean, sterilize, repair and reform your used gloves—return them in good condition, ready for safe performance in toughest duty. And it costs you only a fraction of what you'd pay for new gloves!

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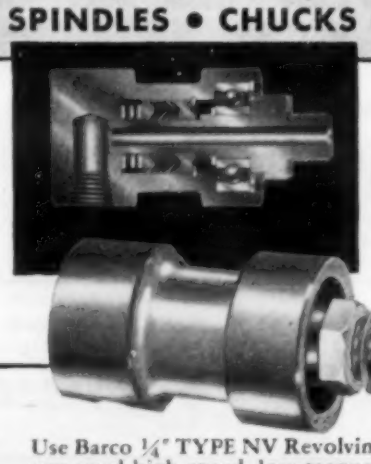
4719-21 N. BROAD ST. • PHILADELPHIA 41, PA.

If you write maker identify as IEN - 3891

For High Speed Rotating Connections on SPINDLES • CHUCKS • CLUTCHES



NEW! BARCO 1/4" TYPE NV REVOLVING JOINT

Use Barco ¼" TYPE NV Revolving Joints wherever you need high speed, low torque, leakproof rotary connections for air, hydraulic, or coolant lines on machine tools and other equipment:

- LIGHT RUNNING! Ball bearing design handles both radial and end thrust with low torque and minimum wear.
- LEAKPROOF! Thanks to Barco's self-adjusting V-ring seal.
- PRECISION-BUILT! All parts machined to close tolerances. Parts interchangeable and easily renewable.
- COMPACT, DURABLE! Easy to install where space is limited. Economical. Built for rugged service. Sealed bearing — lubrication not required.
- WIDE SPEED RANGE! Up to 2500 RPM. For pressures to 300 psi (air) or 1500 psi (hydraulic). *Send for information.*

BARCO MANUFACTURING COMPANY
538E Hough Street • Barrington, Illinois

If you write maker identify as **IEN - 3892**

Yes! THRIFTMASTER makes *ALL TYPES* of DRILLHEADS

Universal Joint Drillhead . . . Full Ball or Bronze Bearing Construction Standard and Heavy Duty. From ½" Minimum Centers up. Capacities to 1" in Steel.

Gear Driven Eccentric Type Adjustable Drill Head . . . Enclosed, Full Ball Bearing Construction.

Special Fixed Center Drillhead . . . Full Ball Bearing Construction.

- **We Stock or Can Build the Right Drillhead for Your Job.**
- **Write for THRIFTMASTER Complete Catalog or phone for a rush, on-the-spot, quote.**

Subsidiary of Thomson Industries, Inc.

THRIFTMASTER *Products Corporation*

1040 N. Plum Street
LANCASTER, PENNA.

Also makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as **IEN - 3893**

EASIER LIQUID LEVEL READINGS WITH IMPROVED WIDE VISION REMOTE INDICATOR

A new-type face on the Yarway Remote Liquid Level Indicator now permits side as well as head-on dial readings.

This improved visibility makes it possible to check boiler water levels from most any position in the control room, or wherever the Yarway Remote Indicator may be installed.

The Yarway Indicator is a manometric type with automatic temperature compensation. Level readings are instant and accurate because the indicator is operated by the boiler water itself. Indicating mechanism is never under pressure. There are no stuffing boxes.

Over 8,000 Yarway Remote Liquid Level Indicators are successfully operating throughout industry—primarily for indicating boiler water levels, but also for many other liquid level applications, and for superheater pressure differential indicators aboard ship.

Write for free Yarway Indicator Bulletin WG-1823.

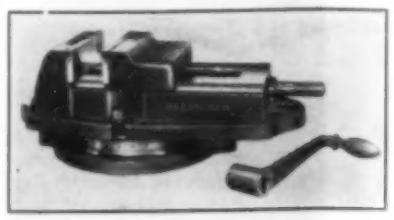
YARNALL-WARING COMPANY
122 Mermaid Ave., Philadelphia 18, Pa.

YARWAY | *remote liquid level indicators*

If you write maker identify as **IEN - 3895**

VISE . . Hand-operated design for a machine table, has swivel base

Source: CHICAGO TOOL & ENGINEERING CO.
8383 S. Chicago Ave., Dept. IEN, Chicago 17, Ill.



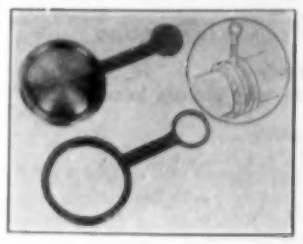
Bulletin No. 60B

The **jaws** in this new No. 60B Palmgren vise measure 6 in. in width by 2 in. in height. They open to a maximum of 6 inches. Removable ground steel jaw plates are standard equipment. The Acme thread jaw screw rides in a replaceable bushing. The base of the vise clamps on a swivel table graduated in degrees through a complete circle. The base of the swivel portion carries two lugs for clamping bolts and also is fitted with 11/16-in. keys and screws to fit machine table slots.

If you write maker identify as **IEN - 3896**

PIPE FITTING . . Blind and spacer are identified by their extended tabs

Source: ENGINEERING CORP. OF AMERICA
Dept. IEN, Westfield, N. J.



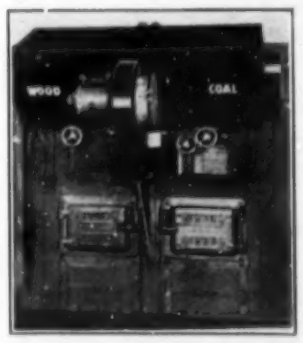
Any metal

Visi-Tab trade names a new line of pipe line blinds and spacers that includes all standard flanged pipe line sizes in a range of pressures from 150 to 2,500 pounds. The units are available in specified metal to apply in raised face joints, ring type connections, tongue and groove flanges. The extended tab indicates whether a blind or its equivalent ring spacer is in place. The machined surfaces are oval or octagonal to fit in the flange grooves normally occupied by ring joint gaskets.

If you write maker identify as **IEN - 3897**

HEATING . . Wood coal feeder delivers to blower type boiler stoker

Source: AMERICAN COAL BURNER & WOOD STOKER CORP.
18 E. Erie St., Dept. IEN, Chicago 11, Ill.

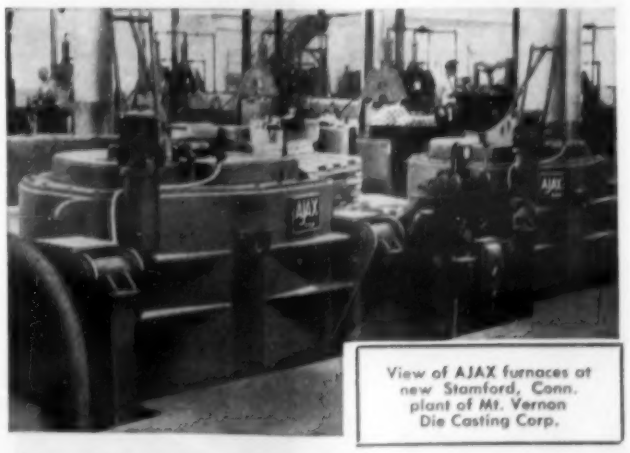


Built to order

Either wood or coal can be fed interchangeably when this new combination feeder is employed on the company's Flo-Matic Fyr-Feeder stoker. Hogged wood refuse is delivered from the wood hopper to the blower inlet, from where it is spread over the fire box area. The wood feed can be shut off and coal delivered from its section of the feed hopper in a similar manner using the same blower.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3898**



View of AJAX furnaces at new Stamford, Conn. plant of Mt. Vernon Die Casting Corp.

Mt. Vernon Die Casting Corp. says

"WE HIGHLY RECOMMEND AJAX INDUCTION FURNACES"

"After an experience of more than 5 years in the use of AJAX furnaces in our Mt. Vernon plant, we are convinced that economy of operation has made them well worth while. We intend to continue installing them till all our die casting machines are fed by AJAX furnaces."

AJAX ENGINEERING CORP., TRENTON 7, N. J.

AJAX YAMA-WYATT — **INDUCTION MELTING FURNACE**

AJAX ELECTRIC METALLURGICAL CORP. and Associated Companies
AJAX ELECTROTHERMIC CORP.
AJAX ELECTRIC CO., INC.
AJAX ELECTRIC FURNACE CORP.

If you write maker identify as **IEN - 3899**

Wear a DUPOR No. 10 Chemical Cartridge Respirator

Code "A" Cartridges (Soda Lime)—White Plastic for light concentrations of inorganic acid gases.

Code "B" Cartridges (Activated Charcoal)—Black plastic for light concentrations of organic chemical vapors.

Code "AB" Cartridges (Soda Lime and Activated Charcoal)—Yellow plastic for light concentrations of combined inorganic and organic gases.

Unit has DUPOR "controlled-breathing" valves. Double filter apertures hold 50cc. capacity chemical cartridges. Soft rubber face mask gives gas-tight fit on any shape face, as well as panorama view with no blind spots. Chemical filters are packed in colored plastic cartridges that will not corrode like metal ones or crush like paper types. Unit is shipped with code "B" cartridge unless otherwise specified.

Sample sent

$5.00 *pp*

Extra Cartridges 70c a set

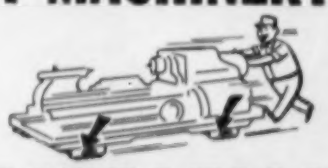
H. S. COVER, South Bend, Ind.

If you write maker identify as **IEN - 3900**

now you can

MOVE HEAVY MACHINERY

or tons of equipment, materials or supplies with a roller skid having the capacity to carry loads 3200 times its own weight . . .



IN ANY DIRECTION

. . . making 90° turns—or ANY kind of turn you desire up to 360°—giving you maneuverability into the tightest spots . . .

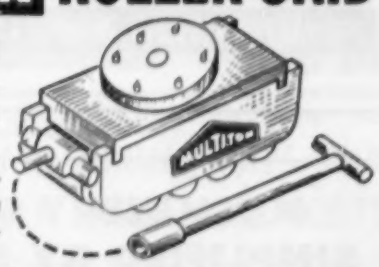
QUICKLY AND EASILY

Does away with old-fashion roller-bar methods. Light in weight, easy to store, you save labor and costly handling . . .

WITH THE NEW **MULTITON ROLLER SKID**

EQUIPPED WITH THE UNIVERSAL SWIVEL PLATE ACCESSORY . . .

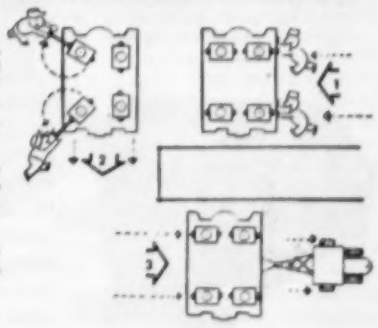
Specially designed for easy moving and turning of even the heaviest loads.



HERE'S HOW MULTITON *CAN WORK FOR YOU!*

As in this example . . .

1. **Production machine is moved broadside out of location. Note position of four Universal Swivel Plate-Equipped MULTITON ROLLER SKIDS.**
2. **Crew is now swiveling two left-hand skids 90°, while right-hand skids have already been turned.**
3. **If a longer movement is necessary, power is used to pull load.**



Let us show you how MULTITON can meet your specific needs. Write for Bulletin 1E today.

STOKVIS ✿ EDERA & CO., INC.

95 MADISON AVE., NEW YORK 16, N. Y.
MUrray Hill 3-4935

If you write maker identify as **IEN - 3902**

How to solve
39 PRODUCTION PROBLEMS
with Mead Air Devices

Ready!

SEE how to use standard Mead units to make automatic or semi-automatic machines!

New 16-page photo-booklet shows how typical production problems were solved. Alert production men will readily adapt the ideas to their own needs.

Write for **NEW "BOOKLET 39"** *Now!*

MEAD SPECIALTIES CO., Dept. EA-44, 4114 N. Knox Ave., Chicago 41, Ill.

If you write maker identify as **IEN - 3903**

for dependable, trouble-free control of "hard-to-hold" fluids . . . .

SPECIFY
HOMESTEAD *Lever-Seald* **VALVES**

they provide sure shut-off . . .

ARE STICK PROOF . . . OPERATE INSTANTLY

Positive, drop-tight seal and instant, stick-proof operation are assured by the exclusive Homestead Lever-Seald mechanism. This powerful lever-and-screw device not only presses the valve's tapered plug firmly into its seat to form a drop-tight seal, but also provides a positive means of relieving seating pressure to permit easy operation. Because all operating parts and seating surfaces are protected in open and closed positions from line fluids, long, dependable, trouble-free service is doubly assured.

If "hard-to-handle" fluids are your problem, specify Homestead Lever-Seald Valves for your next installation or as replacements. We make them in metals and alloys to specification in sizes 1½" to 12", pressures from vacuum to 1500 lbs.; temperatures from 40° below zero to 1100°F. Dry seat, or pressure gun lubricated optional.

Send for details and copy of VALVE REFERENCE BOOK No. 39-3.

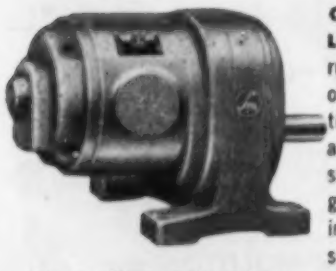
HOMESTEAD VALVE MANUFACTURING COMPANY

P. O. Box 85 "Serving Since 1892" Coraopolis, Pa.

If you write maker identify as **IEN - 3904**

MACHINERY DESIGNS SIMPLIFIED BY SLO-SPEED

Slo-Speeds on steel drum re-conditioning equipment manufactured by L. M. Gilbert Co., Philadelphia, contribute to the high quality of our products and assure continuous operation under difficult conditions, reports Mr. L. M. Gilbert. We use Slo-Speeds on our equipment because of their streamlined, protected design, rugged construction, trouble-free service, and versatile mounting features. Sterling Electric Power Drives are also used on electric cranes, machinery for the stone industry and other special machinery we manufacture.



STERLING SLO-SPEED GIVES YOU THE ONE BEST LOW SPEED AND gives uninterrupted service — carries heavy overhung loads — provides versatile mounting and flexibility in arrangement of machinery — saves valuable space — provides greater safety — costs less to install and use. An indispensable source of low speed power for:

Agitators	Dryers	Presses
Blenders	Feeders	Pumps
Blowers	Kilns	Screens
Conveyors	Mills	Tumblers
Cookers	Mixers	Etc., etc.

20-page illustrated catalog... Sterling Speed-Trol, Slo-Speed, Klosd and Klosd-Tite Electric Power Drives. Write for catalog No. D-4[illegible]

STERLING ELECTRIC MOTORS

Plants: New York City 51; Chicago 35; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

USEFUL INFORMATION
(Concluded)

If you write maker identify as **IEN - 3905**

TANKS . . Cardboard slide calculator gives gallon capacity of round and rectangular tanks

Hauser-Stander Tank Co.
4816 Spring Grove Ave., Dept. IEN, Cincinnati 32, Ohio

"Tank Capacity Computer" is new 8½ by 3-in. cardboard slide calculator that reads capacity in gallons against dimensions in feet. It is for round tanks from 1½ to 30 ft. in diameter with corresponding capacity of 20 to 100,000 gal. and for rectangular tanks from 2 to 6 ft. in width, 2 to 20 ft. in length, 30 to 10,000 gal. capacity. Included is set of data tables.

If you write maker identify as **IEN - 3906**

TESTING . . Color card shows spectra of 36 elements that can be detected by flame analysis

Beckman Instruments Inc.
800 Mission St., Dept. IEN, South Pasadena 1, Calif.

Barium to Yttrium is the range of elements covered by new postcard-size Chart FC-5. It shows emission spectra of 36 typical elements that can be detected by flame analysis. Emission lines are shown against a full-color spectrum from 300 to 900 millimicrons. The card is intended for reference in chemical analysis with the flame spectrophotometer.

If you write maker identify as **IEN - 3907**

TESTING . . How to plan a laboratory is reviewed in 28-page bulletin with picture examples

Scientific Apparatus Makers Association
20 N. Wacker Drive, Dept. IEN, Chicago 6, Ill.

"Better Laboratory Planning," revised edition, offers suggestions on how to approach the subject such as considering function ahead of structure, use of standard equipment components, services available, recommended bidding procedure. Pictures show examples from industrial research to schools.

If you write maker identify as **IEN - 3908**

WATER TREATING . . Book describes methods of obtaining fresh water from the ocean in quantity

Ronald Press Co.
15 E. 26th St., Dept. IEN, New York 10, N. Y.

Study sponsored by the Conservation Foundation is reported in 230-page book, "Fresh Water from the Ocean," by C. B. Ellis and other members of Nuclear Development Associates, Inc. List price is $5. The quantity of 1,000 million gallons per day is taken as the basis. It covers a variety of methods, concludes that an electric membrane method should be cheapest.

If you write maker identify as **IEN - 3909**

WIRE ROPE . . Booklet of suggestions on handling, storage and application of wire rope

Leschen Wire Rope Division
5909 Kennerly Ave., Dept. IEN, St. Louis 12, Mo.

Eighteen suggestions are made in 4-page Bulletin 102 from don't drop reels to attach fittings and clips properly. They all deal with the subject title, "How to Get More Work Out of Your Wire Rope." Little humorous sketches serve to emphasize the points made by the specific suggestions.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3910**

DOLLIN Zinc & Aluminum **DIE-CASTINGS**

LARGE: Aluminum die-castings made on large cold-chamber type, high pressure machines. Large zinc die-castings made on large plunger type machines.

SMALL: Zinc die-castings, 1000 per lb. to 3 per lb. High-speed *automatic* machines. More design latitude... attractive tool costs, piece prices.

SEND PRINTS OR SAMPLES FOR QUOTATION —engineering advice at no obligation

Literature on request

DOLLIN CORPORATION, 630 South 21st Street, Irvington 11, N. J.

If you write maker identify as **IEN - 3911**

FOR all those interested in extremely thin stainless steel sheet and strip . .

VERI-THIN *MicroRold*

The Washington Steel Corporation is now producing Veri-Thin MicroRold stainless steel sheet and strip, available in 18-8 grades as follows:

36" wide Sheets	.006" to .009"	2B or 2D Finish
30" wide Sheets	.004" to .009"	2B or 2D Finish
23 1/16" wide Max.	.0015" to .009"	Bright Annealed

Veri-Thin MicroRold Type 430 is available as follows:

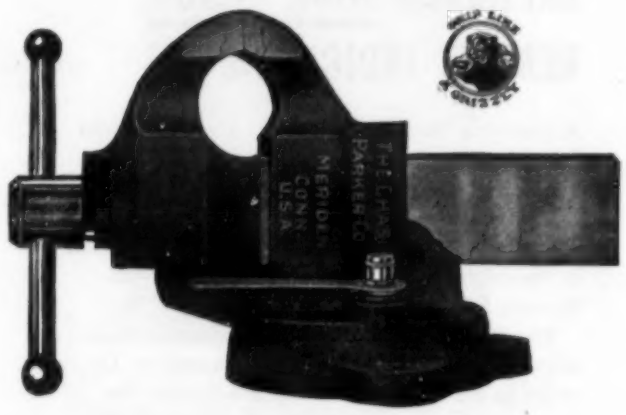
30" and 36" widths	.009"	2B Finish
23 1/16" wide Max.	.0015" to .009"	Bright Annealed

Ask your steel warehouse distributor about Veri-Thin MicroRold stainless sheet and strip

WASHINGTON STEEL CORPORATION
WASHINGTON, PENNSYLVANIA

If you write maker identify as **IEN - 3912**

PARKER
VISES



The Complete Line

Write for Catalog

Machinists • Top Swivel Jaw
Combination Pipe • Hinge Pipe
Woodworkers • Utility

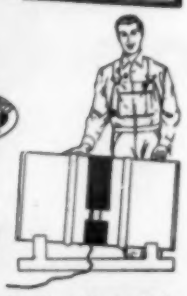
STOCKED BY DISTRIBUTORS EVERYWHERE

THE CHARLES PARKER CO., MERIDEN, CONN.

If you write maker identify as **IEN - 3913**

SPEED UP
SLOW-FLOW MATERIALS

TARS
PLASTICIZERS
WAXES
MOLASSES
GLUES
RESINS
GREASES
GUMS . . ETC.



ACRAWATT ELECTRIC
DRUM HEATERS
FIT ALL STANDARD 22¼" DRUMS

- Proven Acrawatt THINSTRIP Construction.
- 3 Heats: 3000 Watts 230 Volts.
- Fast Heat Transfer.
- Aluminized Steel Encased.
- Enclosed Wiring Terminals.
- Low Radiant Loss.
- Fully Insulated.
- Easy to Install and Remove.

Kill time-consuming, costly slow-flow of viscous materials. Slip one or more Acrawatt Drum Heaters on your drums. Make cloggy, sluggish contents get a move on. Go on and off in a jiffy. Safe and simple to apply and operate. Use singly or in multiple. Save with Acrawatt reliability, long life ruggedness and efficiency. Order today.

ORDER NOW
EA. $19.50 F.O.B. CHICAGO
Spot Shipment
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FOR BETTER ELECTRIC HEATERS AT BETTER PRICES, LET US QUOTE

ACRA ELECTRIC CORPORATION

9905 PACIFIC AVENUE • FRANKLIN PARK, ILLINOIS

If you write maker identify as IEN - 3914

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS

USE "RING SEAT"

CENTER DRILLS

IF YOU GRIND BETWEEN CENTERS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center — at the original place.

• A PREMIUM DRILL AT NO EXTRA COST •

LINK INDUSTRIES

13848 Elmira Detroit 27, Mich.

FREE CIRCULAR

If you write maker identify as IEN - 3915

IT'S EASY TO MAKE

Repairs

LIKE THESE...

Just mix and fix—it's easy with Smooth-On No. 1 Iron Cement. You can seal cracks in pipes, boilers, metal containers . . . tighten loose screws and fixtures in wood, metal or tile . . . anchor bolts in concrete. Smooth-On expands as it sets and hardens like iron. Makes a tight, lasting repair that virtually becomes a part of what it fixes. Keep a can on hand (Smooth-On doesn't deteriorate) and use it as you need it—at a cost of only a few pennies per repair.

FREE REPAIR HANDBOOK

New, completely revised, 48-page illustrated handbook has hundreds of time and money saving repair tips for jobs in the plant and around the home. Millions of these repair handbooks have been distributed during our 58-year history. Write for your copy today.

80 401

SMOOTH-ON MANUFACTURING CO., DEPT. 1
570 COMMUNIPAW AVE., JERSEY CITY 4, N. J., U. S. A.

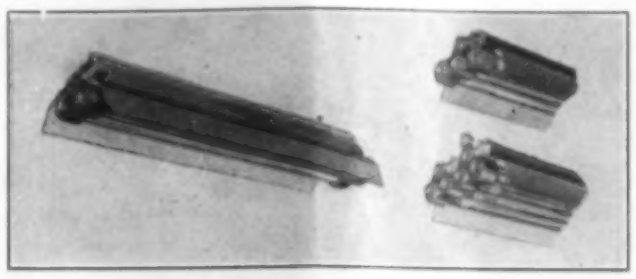
SMOOTH-ON

THE IRON CEMENT OF MANY USES

If you write maker identify as IEN - 3917

LIGHTING . . Fluorescent fixture explosion proof, 2, 3, 4-lamp design

Source: APPLETON ELECTRIC CO.
1713 Wellington Ave., Dept. IEN, Chicago 13, Ill.



Pre-Heat, Slimline, or Rapid Start ballast

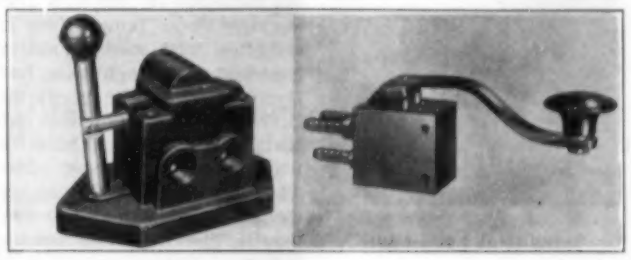
Two, three and four-lamp designs, for both straight and angle mounting, are now available in the explosion proof Type-EFU line of fluorescent fixtures. The units are suited for use in Class I, Groups C and D and in Class II, Groups E, F and G hazardous locations. They permit safe relamping from either end and can be installed in a continuous row. They conform to NEC Standards when used with appropriate Appleton fittings.

The fixture is designed for use with 40-watt 48-in. T-12 and with 100-watt 60-in. T-17 fluorescent lamps. Each fixture is factory sealed to eliminate the need for external seals. Line connections are made to a terminal block in the junction chamber. End housings are cast aluminum. Reflectors are white enameled steel with gray exterior. They can be removed for cleaning when required.

If you write maker identify as IEN - 3918

VALVES . . Four way pneumatic for cylinder operation, poppet design

Source: MEAD SPECIALTIES CO.
4114 N. Knox Ave., Dept. IEN, Chicago 41, Ill.



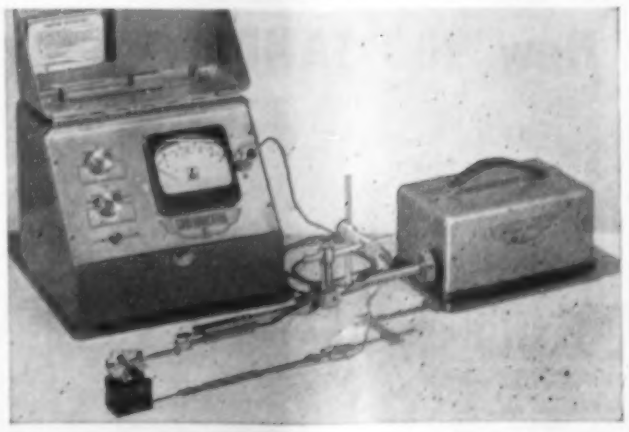
New in the Mead Line

Illustrated is a new ½-in. assembly, to the left, and a ¼-in. unit to the right, in the company's line of 4-way pneumatic operating valves. The larger unit connects for cylinder movement in one direction when the lever is pushed forward and in the opposite direction when it is retracted. A spring can be attached for self-return action.

Type FT-4 Fingertip is a new 4-way valve similar to the Type FT-1 3-way valve, previously described IEN-10259-49. It carries threaded openings for ¼-in. pipe connection and has capacity for cylinders to 3-in. bore. A ⅛-in. movement of the operating lever is sufficient to move the valve between open and closed position. The lever returns to its starting point after each release. The twin mounting holes, on the top and sides, provide for installation in any position.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3919



NEW SURFINDICATOR* ACCESSORIES SIMPLIFY SURFACE ROUGHNESS CHECKS

The Brush SURFINDICATOR is a practical shop tool for measuring surface roughness quickly and accurately. These new accessories—motor drive and small bore adapter—extend the usefulness of the instrument. The motor drive provides an easy, rapid method of inspecting a large number of identical parts and is ideal for checking fine finishes. The adapter allows measurement in bores as small as ¾" diameter, gear teeth, slots, lands, and other limited access areas. For bulletin write Brush Electronics Co., Dept. II-4, 3405 Perkins Ave., Cleveland 14, Ohio.

* Trade Mark

BRUSH ELECTRONICS COMPANY

INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZO-ELECTRIC MATERIALS • ACOUSTIC DEVICES
MAGNETIC RECORDING EQUIPMENT
ULTRASONIC EQUIPMENT

formerly The Brush Development Co. Brush Electronics Company is an operating unit of Clevite Corporation.

If you write maker identify as IEN - 3920

THE HAMILTON

PORTELVATOR®

(Portable Elevating Table)

MAKES IT *Easy* TO LIFT • LOWER LEVEL • TRANSPORT LOADS UP TO 5,000 lbs.

3 TABLE SURFACES
Can be worked at from ALL 4 SIDES

Slow or fast lift.

Self locking at any height.

4 POINT SUPPORT (table can't tip)

Lift mechanism can be operated from either end.

Turns easily on anti-friction casters. Positive floor lock.

WELDED CONSTRUCTION

THREE STANDARD MODELS TO CHOOSE FROM

FREE BULLETIN

Write The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio. Ask for Bulletin No. 5412.

IT'S A **Hamilton Tool**

USE IT WITH CONFIDENCE

If you write maker identify as IEN - 3921

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 3922

ALGRIP SAFETY FLOORING PAYS FOR ITSELF IN LOWER INSURANCE COSTS

Crippling accidents that cut production, hurt morale and push insurance premiums too high, can be stopped quickly, simply, permanently in any plant with ALGRIP. For ALGRIP Abrasive Rolled Steel Floor Plate installed in danger areas ends accidents at once and brings insurance costs down fast.

Hundreds of tiny abrasive particles are impregnated *to a controlled depth of penetration* into each square foot of ALGRIP's tough steel plate giving it a "grinding-wheel" grain surface that stays non-slip even when wet or splashed with oil—even on steep inclines! And ALGRIP's surface never becomes smooth because wear only exposes new gripping particles . . . an exclusive ALGRIP safety feature.

Investigate ALGRIP now. You'll find it pays for itself in insurance savings.

Send today for full details on how ALGRIP *can save money for you. There's no obligation.*

A.W. ALGRIP *Abrasive Rolled Steel Floor Plate*

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send free booklet AL-3 on savings from safety with ALGRIP.

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

If you write maker identify as IEN - 3923

If you write maker identify as IEN - 3924

If you write maker identify as IEN - 3925

Here's "must" reading for anyone who plans, buys, or uses storage equipment. Shows how you can have custom-arranged facilities, yet pay only the price of standardized units. Learn how to survey, make floor plans and elevations of your own particular requirements. Change arrangement of components anytime. Buy only what you need; expand as you go. Mail coupon today for your free copy.

EQUIPTO — 655 Prairie Avenue, Aurora, Illinois
Please send me copy of new Equipto Booklet entitled "How to Solve Your Storage Problems". I understand that there is no charge or obligation of any kind.

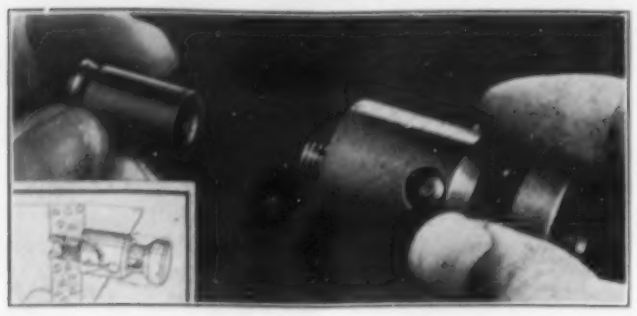
NAME _____
FIRM NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Equipto — Division of Aurora Equipment Company, 655 Prairie Avenue, Aurora, Illinois

If you write maker identify as IEN - 3926

FASTENING . . Expanding tool to secure anchor in masonry wall

Source: GREENLEE TOOL CO.
2136 12th St., Dept. IEN, Rockford, Ill.



For construction and maintenance

Lead screw anchors are expanded quickly, in holes drilled in masonry walls, by application of this new tool. The tool shank threads into the anchor and the latter is inserted into the drilled hole. Then a hammer or mallet is employed to strike the expander until the anchor has been set. Finally the expander is threaded out of the anchor and the job is complete. Three sizes take 10/24, 12/24 and 1/4-20 threaded anchors. List price is $3.25.

If you write maker identify as IEN - 3927

LIGHTING . . Reflector flood lamp for outdoor and indoor applications

Source: RADIANT LAMP CORP.
300 Jelliff Ave., Dept. IEN, Newark 8, N. J.

Bulletins 14 and 83

Weather proof hard glass is employed with an inside silver reflector in this new Long Service flood lamp. Two assemblies, with medium skirted base and with mogul base, have been added to the previously developed R-40 line with 300-watt rating. A mogul base 500-watt unit also has been added. The medium skirted base unit measures 6¾ in. in overall length. The other two measure 7 inches. Diameter is 5 in. in all three cases. List price is $3 and $3.45. Rated average laboratory life is 2,000 hours. The lamp is for 110 volts.

If you write maker identify as IEN - 3928

Powdered metal mixed in with the coating of an arc electrode has been found to materially improve the performance of the electrode and speed the welding operation by Lincoln Electric Co., 22801 St. Clair Ave., Dept. IEN, Cleveland 17, Ohio. The powder metal coating causes formation of a crucible in the end of the electrode so drag technique can be used in control of mechanical arc length. Slag formed from the powdered metal coating is practically self-cleaning and a smooth clean weld results. The powdered metal acts primarily to absorb a portion of the heat in the arc and adds itself to the supply of molten metal to complete the weld.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3929

If you write maker identify as IEN - 3930

If you write maker identify as IEN - 3931

If you write maker identify as IEN - 3932

If you write maker identify as IEN - 3933

If you write maker identify as IEN - 3934

INVESTIGATE Sta-Warm

COMPOUND _ RESIN _ SOFT METAL

MELTING and DISPENSING EQUIPMENT

The fast, economical way to handle Heated Compounds is the Sta-Warm way... with melters that are tailored to your job.

You'll find helpful application data from Sta-Warm's 30 years of experience supplements their recommendations to you. This broad experience is always available when you inquire about compound or resin or soft-metal melting or dispensing problems.

INVESTIGATE STA-WARM TODAY outlining your current problem.

SOME OF THE ACCESSORIES

- VARIABLE OR FIXED THERMOSTAT OR THREE HEAT SWITCH
- LONG LEGS, SHORT LEGS, OR NONE
- LOOSE COVERS OR HINGED LIDS
- HAND OR MOTOR DRIVEN AGITATORS
- GATE VALVES OR NEEDLE VALVES

...PLUS MANY OTHER FEATURES TO SPEED PRODUCTION FOR YOU

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 3936

GRINDING . . Abrasive belt machine for free hand and table supported work

Source: HAMMOND MACHINERY BUILDERS INC.
1600 Douglas Ave., Dept. IEN, Kalamazoo, Mich.

Bulletin 320

Illustrated is bench design of the company's new Model F-1 abrasive belt grinding machine to show the arrangement of its belt over the driving and idler pulleys and the spring backed arc adjustment for the rear idler to maintain correct belt tension. The machine provides a 10½-in. throat and mounts a 1-in. abrasive belt with a motor drive for belt speeds of 2,150 fpm.

Work can be handled on the 8 by 8-in. table or it can be held free hand above the table to finish irregular contours. The table can be tilted at an angle or can be removed entirely. The machine is available with a floor stand containing a dust collector in integral assembly.

If you write maker identify as IEN - 3937

PRINTING . . Sensitized paper for use in diazo type copying machines

Source: CHARLES BRUNING COMPANY
4700 Montrose Ave., Dept. IEN, Chicgo 41, Ill.

Specifications upon request

Sharp contrast, true reproduction, uniform density characterize prints made on a new paper developed by the company for use in its Copyflex diazo type equipment. Weak image lines from poor originals are reproduced strongly on the paper. It is capable of showing various shades of gray in pencil sketches. The paper is available in three speeds in both sheet and roll form to a maximum width of 54 inches.

If you write maker identify as IEN - 3938

RIVETING . . Double head machine to feed and drive two-part rivets

Source: CHICAGO RIVET & MACHINE CO.
9600 W. Jackson Blvd., Dept. IEN, Bellwood, Ill.

Built to order

Solid rivets are held in the magazine of one of the heads on this new machine. Tubular rivets are held in the other. The two feed together to the point of insertion in the work where the tubular rivet is moved to a rigid position in the lower anvil and acts as a pilot to assemble the parts to be secured together. The solid rivet drives from the top to meet the tubular rivet into which it is entered to form a strong uniform fastening with rivet heads alike on both assembly faces.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 3939

The Only Air Cylinder

WITH ALL CONTROLS BUILT-IN

This air cylinder is a complete, "packaged" power unit. Electrical switching controls (1), four-way directional valve (2), and independent speed control valves (3), are all a built-in part of the unit. Only one air connection required yet unit is full double-acting. So revolutionary in design it is known as the Bellows Air Motor. Available in five bore sizes: 1¼", 1¾", 2½", 3⅝" and 4½". Virtually any stroke length. Optional choice of mechanical built-in valve controls.

Write for this Free Booklet

Bulletin CL-50 describes the complete line of Bellows "Controlled-Air-Power" Devices. 36 pages, three colors. Chock full of helpful information for production men and design engineers. Free on request. Write Dept. IEN-454.

The Bellows Co.
AKRON 9, OHIO

In Canada: Bellows Pneumatic Devices of Canada, Ltd., 4972 Dundas St. W., Toronto, Ontario.

909A

If you write maker identify as IEN - 3940

5414

HOW DO YOU THREAD A PRECISION HOLE?

If your operation involves precision threading of precision holes, meet the

HAMILTON SMALL HOLE SUPER SENSITIVE PRECISION TAPPING MACHINE

Handles the smallest and finest tap to 10-32 inclusive.

Spindle idles in reverse, changes rotation instantly as pressure is applied to tap, reverses instantly as pressure is released.

Taps to the very bottom of blind holes without risk of tap breakage.

WANT COMPLETE FACTS?

Write for FREE Hamilton Bulletin No. 5414. Address The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio.

IT'S A Hamilton Tool
USE IT WITH CONFIDENCE

If you write maker identify as IEN - 3941

Now FOR SMALL FLOW FILTRATION

THE **Delpark Junior**

Write for DELPARK JUNIOR BULLETIN

Designed for coolant filtration on grinders, hobbers, shavers, cutters, hones and lappers with small coolant flows. Filtration capacity on cutting oils ¼ to 1 g.p.m., soluble oils ½ to 1½ g.p.m.

Permits closer tolerance and finish requirements, greater machine efficiency and production, fewer rejects. Assures longer wheel and tool life, lowers coolant temperature. Requires no floor space. Disposable filter tray replaced in seconds. Allows cleaner working conditions.

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVE. LEBANON, INDIANA

If you write maker identify as IEN - 3942

"AMF De Walt saves us 80% on maintenance time and labor!"

says Marty Kule, Lezius-Hiles Printing Company, Cleveland, Ohio

"A typical job AMF De Walt® did for us was cutting and drilling lumber for 20 stock trucks. All the 1¼" pieces of lumber for one truck were cut and drilled in 1½ hours. Without AMF De Walt, the job used to take 8 hours. What's more, each came out accurate, alike, and required no finishing. The savings on this job alone half paid for our AMF De Walt!"

Versatile, economical, does all jobs. Fast, safe, accurate, compact. Prices start at $229 for ½ H.P. model. Send for catalog to De Walt Inc., Dept. IEN-54-4, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.
DeWALT
POWER SAWS
In Canada: De Walt Canada Ltd., Guelph, Ontario

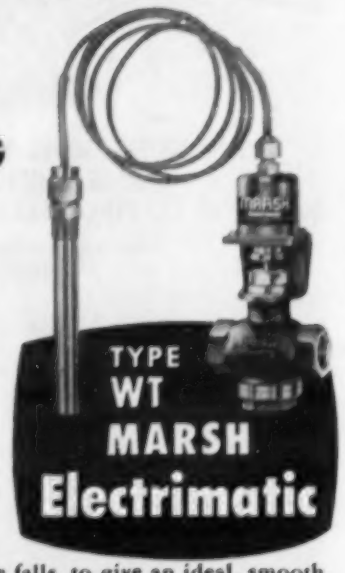
Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as IEN - 3943

MARSH QUALITY

. . . in a Temperature-actuated

REGULATING VALVE



Smooth, modulating control

— for brine lines in cooling systems

— for condensers where pressure line is not desired

A temperature actuated regulating valve you can depend on—the Marsh-Electrimatic Type WT for pressures up to 150 psi; water, brine or steam. It opens as temperature rises, closes as temperature falls, to give an ideal, smooth, modulated control. Can be mounted in any position; serviced without breaking connections. Seat beads are monel to eliminate wire drawing. Sturdy, two-ply bellows assures extra service life. Temperature ranges of 20°F.-60°F.; 60-100, 100-140, 140-180, 160-220. All standard sizes from ⅜" through 4". All styles of temperature bulbs.

Ask for latest data

MARSH INSTRUMENT CO. *Sales affiliate of Jas. P. Marsh Corporation*
Dept. A., SKOKIE, ILL.

If you write maker identify as IEN - 3944

They go on FASTER and stay on LONGER!

PIC STEEL UNIONS for 150# Service

One reason you should get hold of Pics — you *can* get hold of them! Ends are uniformly flat sided to accommodate open end wrenches — and strong (of heavy steel pipe coupling stock). *2nd reason:* Pics look fine teamed up with original equipment (they're bright, good looking). *Third,* Pics are 100% zinc plated to minimize rust. *Fourth,* Pics have a special wedge type bronze seat for positive closure. *Fifth,* they cost less than a galvanized, no more than a black malleable union.

Write for FREE Samples

DART UNION COMPANY
130 Thurbers Avenue, Providence 5, R.I.
The Fairbanks Co. — Distributors
Boston • New York • Pittsburgh • Rome, Ga.

If you write maker identify as IEN - 3945

GET YOUR COPY

of FREE booklet on latest methods of Abrasive Belt Machining

46 *factual examples* show how **ABRASIVE BELT GRINDING** will do all this for you:

- Slash Costs
- Improve Finish
- Greatly Increase Production
- Minimize Dimensional Distortion
- Grind to Precision Tolerances

Send today for your **Free** copy of this 32-page fact-packed booklet. Tells all about this modern machining method — Abrasive Belt Grinding . . . 46 actual case histories of time and money saved . . . more than 100 illustrations.

NOTE: Porter-Cable Abrasive-Belt Machines are now manufactured and sold exclusively by Engelberg, manufacturers of precision machinery since 1888.

The ENGELBERG Huller Co., Inc.
144 Seneca St., Syracuse, N. Y.
Send free booklet and name of nearest distributor to:
Name _____
Title _____
Company _____
Address _____
City _____ State _____

ENGELBERG

If you write maker identify as IEN - 3946

COUNTING . . Electronic instrument counts events at 100,000 per second

Source: DETECTRON COMPANY
5420 Vineland Ave., Dept. IEN, North Hollywood, Calif.

For portable use

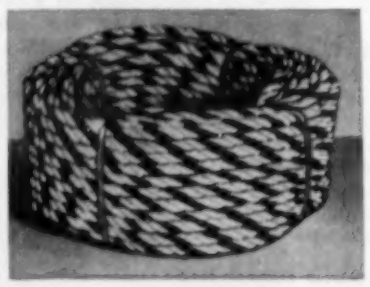
Type DS-660 is a new four unit assembly of the company's electronic decade, previously described IEN - 11681 - 51. The instrument will count and display any electrical or mechanical event which can be converted into varying voltage of sufficient amplitude for a counting speed between 20 and 100,000 events per second. The assembly includes automatic and manual reset, self-checking action, display from 1 to 10-sec. duration, plug-in decade design. The basic unit reads out to 10 kc., four decades.

Accessories include a tachometer pickup and photocell. Additional decade units can be specified to increase the count capacity. Dimensions of the assembly shown are 14¼ by 9¾ by 7½ inches. Weight is 16 pounds. Accuracy is 0.1 per cent.

If you write maker identify as IEN - 3947

SIGNALING . . Colored plastic rope to surround hazardous plant areas

Source: INDUSTRIAL PRODUCTS CO.
2801 N. 4th St., Dept. IEN, Philadelphia 33, Pa.



Poly-Rope No. 10

Two stands of yellow and one of black polyethylene plastic make up this new Plastic Barrier rope. It is highly visible and carries out the standard caution colors that are employed to identify a restricted area. It can be strung to set up a barricade around hazardous areas in plants, yards, streets, construction operations. It is not subject to attack by acids and other corrosive materials.

The rope measures 5/16 in. in diameter. It is light, flexible and easy to tie in place. It measures 38 to 42 ft. per pound and lists at $2.50 per pound.

If you write maker identify as IEN - 3948

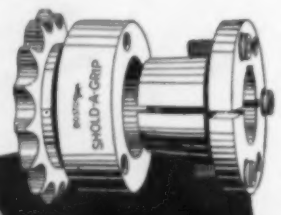
Interval timers and associated control equipment, built to order, is one of the specialties of Lektra Laboratories, Inc., 154 11th Ave., Dept. IEN, New York 11, N. Y. The company is prepared to supply the equipment to meet specified requirements in variable pre-determined interval ranges from 0.01 sec. to minutes or hours. Timing the insertion of metal rods and plastic eye glass frames, making a photo-printer machine semi-automatic, synchronizing six recorded discs with a picture screen projection, controlling the process of manufacture of chewing gum are typical applications for which the company has supplied the time control equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3949

How cost-wise buyers rate

INTERCHANGEABLE TAPERED **BUSHINGS and SPROCKETS**



GOOD BETTER ✓ **BOSTON** *Gear*

SHOLD-A-GRIP
ELIMINATES RE-BORING
Fit all common sprocket sizes to broader range of shaft sizes

IN STOCK AT 92 BOSTON *Gear* DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get Sprocket Catalog Supplement SC-2, and handy SHOLD-A-GRIP Selection Chart. Saves time and trouble in drive assembly and maintenance. Ask your BOSTON Gear Distributor, or write: Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN - 3950

Alloy Fabrication is our Baby!

YOU NAME IT . . . Any processing equipment—autoclaves, agitators, condensers, baskets, evaporators, kettles or stills. Small experimental models or full-scale production equipment. Any size or shape—metal or alloy including stainless steel, monel, Hastelloy, etc.

WE'LL MAKE IT! We'll follow your specifications . . . or help you develop them. Entirely new, unconventional equipment no problem. Tell us your requirements. We'll submit careful estimates without obligation. Write or wire for complete information to:

Emerson-Scheuring

TANK & MANUFACTURING CO., INC.
2073 Martindale Avenue • Indianapolis 7, Indiana

If you write maker identify as IEN - 3951

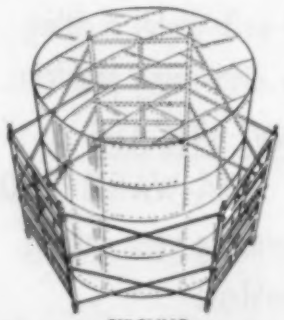
Overhead Work's *Not just 'UP'*

When you have to go *around* a job or *get inside* a curved structure, buy Universal Ezebilt—*the one scaffold* you can use on most every job. For example, Ezebilt's exclusive Gravity-Lock brace mechanism lets you "swivel" standard panels to "circle" curved surfaces, or to "rack-down" safely in narrow passages. And you don't need to fuss with nuts and bolts or loose parts — Ezebilt's rustproof Gravity-Lock helps you to put your scaffold up and take it down in much less time — handle jobs easier and faster because there are '*no bolts to master.*'

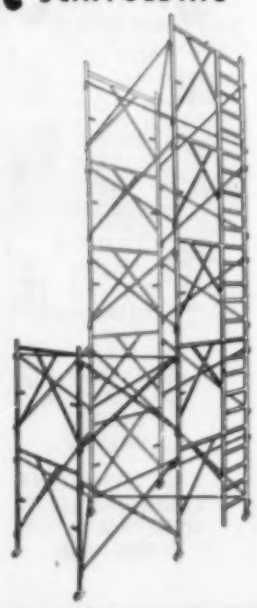
UNIVERSAL Ezebilt SCAFFOLDING

Write for New Catalog

Shows how to "custom-build" work platforms to any size or shape with standard Universal Ezebilt Scaffolding.



CIRCLING



SAFETY ROLLING TOWER

Distributors offer fast help and service. See your phone directory.

UNIVERSAL MANUFACTURING CORP.
ZELIENOPLE 5, PA.

If you write maker identify as IEN - 3953

If you write maker identify as IEN - 3954

it's our error!

If you haven't been given "the facts" on

SPEED STEEL PLATES

they are

SPEED CASE	a low carbon free machining open hearth steel
SPEED TREAT	a medium carbon free machining open hearth steel
SPEED ALLOY	a chromium alloy steel

briefly they

- are easy to heat-treat
- are fast machining
- give longer tool life
- produce better finishes

THERE ARE SPEED STEEL SPECIALISTS IN...

☐ Akron, Ohio	Burger Iron Co.
☐ Baltimore, Md.	Horace T. Potts Co.
☐ Bridgeport, Conn.	Bridgeport Steel Co.
☐ Buffalo, N. Y.	Beals, McCarthy & Rogers
☐ Cambridge (Boston), Mass.	Brown Wales Co.
☐ Chicago, Ill.	W. J. Holliday & Co., Inc.
☐ Dallas, Tex.	Earle M. Jorgensen Co.
☐ Detroit, Mich.	Peninsular Steel Co.
☐ Hammond, Ind.	W. J. Holliday & Co., Inc.
☐ Hartford, Conn.	Brown Wales Co.
☐ Houston, Tex.	Earle M. Jorgensen Co.
☐ Indianapolis, Ind.	W. J. Holliday & Co., Inc.
☐ Lewistown, Me.	Brown Wales Co.
☐ Los Angeles, Calif.	Earle M. Jorgensen Co.
☐ Memphis, Tenn.	Pidgeon-Thomas Iron Co.
☐ Montreal, Quebec	Peckover's, Ltd.
☐ Newark (New York), N.J.	Grammer, Dempsey & Hudson, Inc.
☐ Oakland (San Francisco), Calif.	Earle M. Jorgensen Co.
☐ Paterson, N. J.	Passaic County Steel Service, Inc.
☐ Philadelphia, Pa.	Horace T. Potts Co.
☐ Toronto, Ontario	Peckover's, Ltd.
☐ Tulsa, Okla.	Earle M. Jorgensen Co.
☐ York, Pa.	Horace T. Potts Co.

FOR FAST INFORMATION ATTACH THIS TO YOUR COMPANY LETTERHEAD AND RETURN TO

W. J. Holliday & Co., Inc.

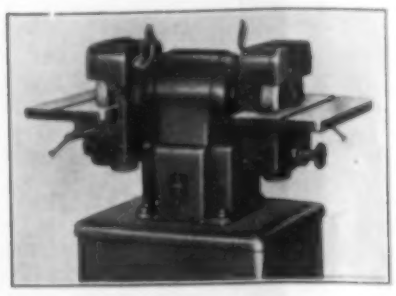
545 WEST McCARTY STREET
INDIANAPOLIS, INDIANA

Speed steels are produced by W. J. Holliday & Co., Inc.—Speed Steel Plate Division

If you write maker identify as IEN - 3956

GRINDING . . Carbide tool machine, ½-hp. motor, for 6-in. cup wheels

Source: HAMMOND MACHINERY BUILDERS INC.
1600 Douglas Ave., Dept. IEN, Kalamazoo, Mich.



Bulletin 230

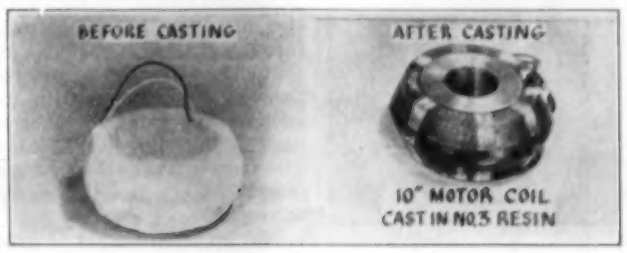
Identical wheels and work tables mount on the two sides of the centrally located ½-hp. 110 or 220-volt motor for operation at 3,450 rpm. in this new Type-D6 dry operating carbide tool machine. The machine is available for bench or floor mounting with weights at 140 and 225 pounds. Standard equipment includes a combination protractor and a diamond dresser without the diamond. The user supplies the wheels. Additional equipment, subject to specification, includes a flexible light fixture, a drip-feed pot and a removable lubricant tray.

The table can be set at any angle between 30 deg. above and below horizontal. It can be moved in and out by turning a hand wheel secured to a feed screw. A safety cup disc, patented design, fits inside the wheel to keep tools and hands out of the cup. The guards are provided with exhaust outlets to connect to a dust collector. Brakes, back of the two wheel guards, provide for quick stopping. A toggle switch controls the motor for rotation in either direction. A companion machine, Model WD-6, adds lubricant supply lines, nozzles, and collector pans that fit beneath the tables.

If you write maker identify as IEN - 3957

INSULATING . . Casting resin has pot life of three to five days

Source: MINNESOTA MINING & MFG. CO.
900 Fauquier St., Dept. IEN, St. Paul 6, Minn.



Technical bulletin upon request

Scotchcast No. 3 is a new electrical insulating resin, supplied in two-part liquid form, to be mixed in large quantities for use over a period of days since its pot life is not limited to minutes or hours. The material is suited to embed resistors, unitize electronic circuits, embed toroidal coils, audio and power transformers in a solid block of resin.

The liquid resin is low in viscosity and so can be used to impregnate coils. A variety of filler materials, such as silica, mica, talc, can be employed with it, depending on the characteristics desired in the finished casting. The resin remains serviceable in an operating range from minus 65 to plus 250 deg. F. It provides resistance to attack by acids, alkalis, solvents and oils. It adheres to most metals, plastics and conductors. Dielectric strength is 1,000 to 1,500 volts per mil on thin sections.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3958

The Model F-1 shown here is a single pole, double throw thermostat used to switch circuits from high to low heat where two heating elements are used. May be used to operate fans in air duct or agitators in tank, etc., when such operations in combination with heaters are desired.

Write for Catalog.

Robertshaw-Fulton CONTROLS COMPANY

ROBERTSHAW THERMOSTAT DIVISION, Youngwood, Pennsylvania

If you write maker identify as IEN - 3959

5417

This GEAR HOBBER delivers *EXTRA* PRECISION

The Hamilton Precision Gear Hobber generates small, fine pitch gears to 6" O.D. of the gear blank. Alignment and trueness of all spindles held to less than .0002".

WHAT'S MORE

Independent selection of speed, feed, and indexing speeds machine set-up and provides a means for matching cutting speed and work feed to the material being machined.

WANT ALL THE FACTS?

Write for Hamilton Bulletin No. 5417. Address The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio.

IT'S A *Hamilton Tool*

USE IT WITH CONFIDENCE

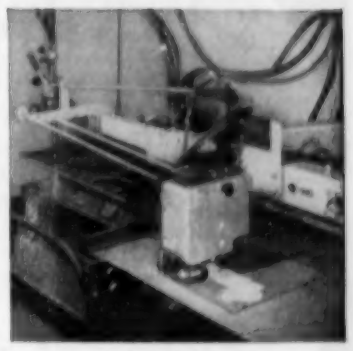
If you write maker identify as IEN - 3960

SIMPLIFY Your Shape-Cutting Jobs with the . . .

OXWELD Automatic Tracer

Trade-Mark

- Positive templet contact... electronic steering control . . . maximum tracing accuracy
- Templets are easy to make, low-cost
- No kerf allowance required in templet
- Dynamic braking prevents overruns
- Local or remote controls . . . simple to operate

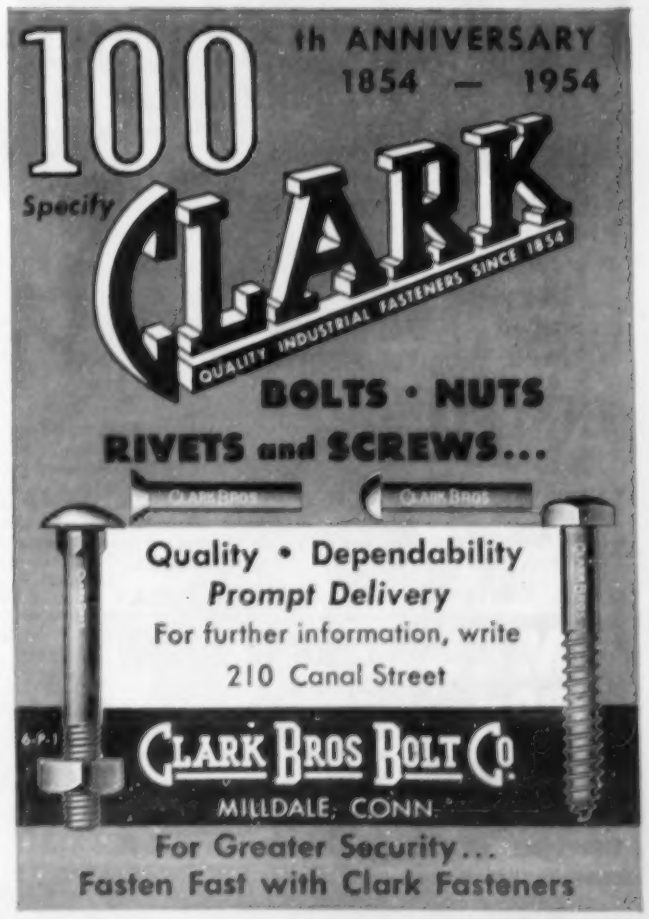


With an OXWELD Automatic Tracer to guide your oxygen-cutting machine, you need never forego the advantages of templet tracing because of time or cost. Just cut actual size templets out of thin plastic sheet with scissors—that's all! Tracer follows practically any templet shape within extremely close tolerances. Drive action is smooth and steady with both single- and multiple-blowpipe setups. Write today for free booklet F-8086.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The term "Oxweld" is a registered trade-mark of Union Carbide and Carbon Corporation.

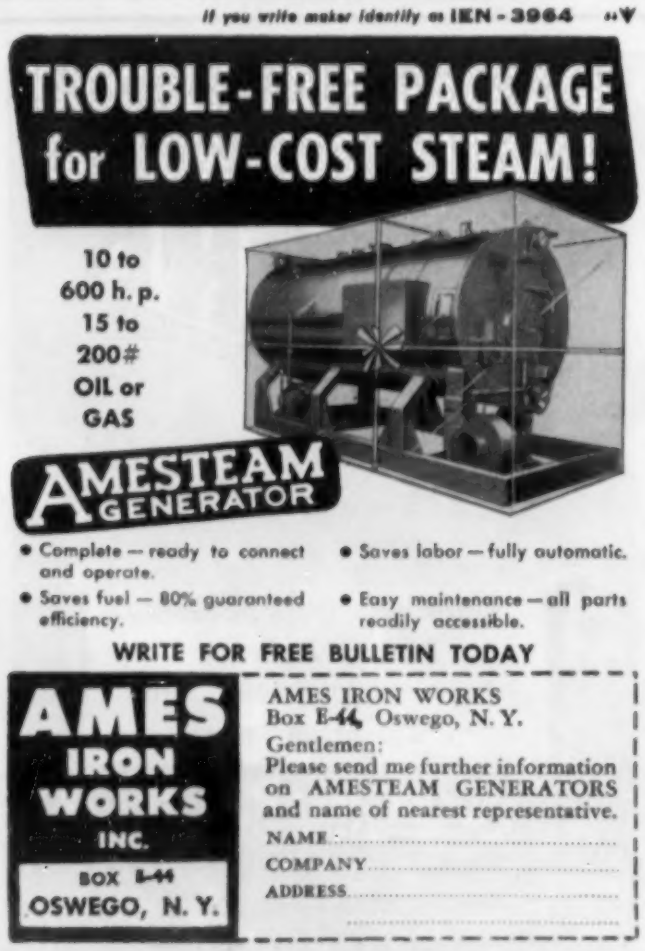
If you write maker identify as IEN - 3961



If you write maker identify as IEN - 3962

If you write maker identify as IEN - 3963

If you write maker identify as IEN - 3964



If you write maker identify as IEN - 3965

PROJECTING . . Optical equipment enlarges and reduces for reproduction

Source: J. J. ENGEL INCORPORATED
624 Syndicate Bldg., Dept. IEN, Minneapolis 2, Minn.

Simplifies drafting

Model 44 is new design of the Art-O-Graph optical projector previously described IEN-7782-50. It casts a bright, sharp image of an illustration, photograph, physical object or color transparency directly on a drafting board. It sets up directly over the board and positions controls under the board for enlargement or reduction of the original to a maximum of four times in either direction.

The object to be projected is secured on a copy board at the front of the housing above the drafting board. It is illuminated and its image is reflected downward by a mirror to a lens above the drafting board. The projector is supported by wall mounting back of the board.

If you write maker identify as IEN - 3966

TRAP . . Inverted bucket design with bellows controlled vent orifice

Source: V. D. ANDERSON COMPANY
1935 W. 96th St., Dept. IEN, Cleveland 2, Ohio

Vents quickly

An orifice, controlled by a bellows, stands open when this new Heat-Kwik trap is cold to handle large quantities of air rapidly. The bellows expands and closes the vent when the air has been removed through it. Any additional air that enters the trap is removed through the vent hole in the bucket that rides in inverted position in the main trap body. The trap is available for lines from ¾ to 1¼ in. and for pressure to 150 pounds.

The inverted bucket is guided on a patented hexagon tube to keep it and the valve mechanism in alignment. Working parts in the trap are made of heat treated stainless steel except the valve and seat. They are Anderloy, a chrome nickel alloy that resists corrosive action of steam and water.

If you write maker identify as IEN - 3967

New service is available to manufacturers operating on the West Coast to set up a preventive maintenance program on electric and electronic instruments. The program includes periodic calibration, regular adjustment and inspection on an annual fee basis. Western Scientific Co., 1369 Laurel St., Dept. IEN, San Carlos, Calif., will give you particulars.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3968

If you write maker identify as IEN - 3969

If you write maker identify as IEN - 3970

If you write maker identify as IEN - 3971

If you write maker identify as IEN - 3972

CHIPS OFF HARD DEPOSITS AT THE TOUCH OF A TRIGGER!

TENNANT HAND REVO-TOOL

SHEARING OFF HEAVY BUILD-UP under machine. Lets one man do the work of a hand-scraper crew. Tool is 9" wide; works in hard-to-reach areas.

- Scrapes up to 160 sq. ft. per hour
- Saves up to 59% in scraping costs
- Cleans iron, steel, concrete and similar surfaces

Just touch the trigger—and this powerful NEW tool chips off stubborn rust, scale, paint and other hard deposits *instantly!* Works 12 to 20 times faster than hand scraping. Leaves clean surface for repainting.

Steel cutters revolve at 2,000 rpm; provide 3,400 impacts per second. Has ¾ hp electric or pneumatic motor. Write for details.

TENNANT ESTABLISHED 1870

G. H. TENNANT CO.
2574 N. 2nd Street
Minneapolis 11, Minn.

HAND REVO-TOOL

If you write maker identify as IEN - 3973

THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

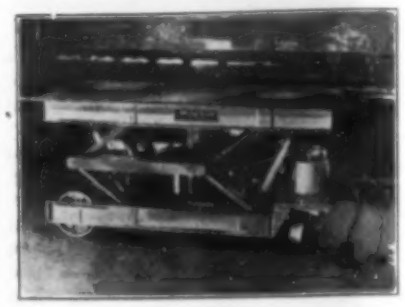
TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

If you write maker identify as IEN - 3975

ELEVATOR . . Hydraulic lift table, power or foot operated, rates 5 ton

Source: WEST BEND EQUIPMENT CORP.
323 Water St., Dept. IEN, West Bend, Wis.



Built to order

The work top on this new table is supported by four hydraulic cylinders connecting to a single power unit. Linkage between the top and base holds the top level and provides for straight upward and downward movement through 26 in. to a maximum of 42 in. above the floor. The table top is a ¼-in. steel plate. Mounting is on ball bearing wheels and casters. Power can be supplied by a foot pump or by a motor-driven unit. Top dimensions can be specified also.

If you write maker identify as IEN - 3976

STRAPPING . . Self-adhesive tape, rayon reinforced, 210 lb. per inch

Source: PERMACEL TAPE CORP.
Highway One, Dept. IEN, New Brunswick, N. J.

Also for sealing

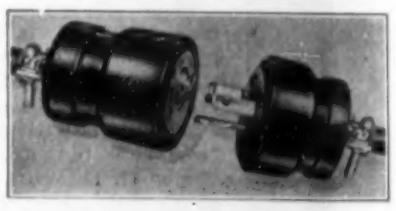
Type P-16 is a new rayon reinforced acetate film tape with lengthwise rayon strands, 100 ends per inch. The body of the tape is transparent. The rubber base pressure-sensitive adhesive is transparent also. The rayon strands provide tensile strength with good shock resistance to withstand whipping and shock loading in connection with packaging materials such as rod and bar stock, pipe, tube.

The tape can be employed in the place of rope, cord, steel strapping, wire, in a good many applications. It is water resistant, will not cut into materials it is holding. It can be employed in short lengths to hold assembly parts in place during shipment and handling. The material is supplied in rolls 60 yards in length. Width is ¼ to 1 in. in ⅛-in. steps.

If you write maker identify as IEN - 3977

CONNECTOR . . Three-wire plug, locking receptacle, 20 amp., 220 volts

Source: DANIEL WOODHEAD COMPANY
15 N. Jefferson St., Dept. IEN, Chicago 6, Ill.



Turnex design

Accidental disconnect is not possible with this new Turnex locking plug and receptacle. The two units are assembled in Neotex neoprene compound housings which are not subject to attack by oil, grease or most chemicals. The contacts are made of brass. The cord grip is molded in. The two units are interchangeable with other standard locking connectors.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3978

BUSCHMAN CONVEYOR overhead cable costing only $3800.00

SAVES $7000.00 ANNUALLY at Honeywell

Vertical curve of Universal Cable Conveyor inclines to convenient work height, utilizes overhead space.

A BUSCHMAN OVERHEAD CABLE COVEYOR SYSTEM replaces former manual handling method at MINNEAPOLIS-HONEYWELL REGULATOR CO. with resulting savings of $7000.00 annually on an investment of $3800.00. This does not include recovered floor space, reduced aisle traffic, easier working conditions and increased production.

It is anticipated that the overall total savings that will be realized by Minneapolis-Honeywell improved production methods in this instance is approximately $16,000.00 per year.

Why not investigate the possibilities of similar savings in your plant operations?

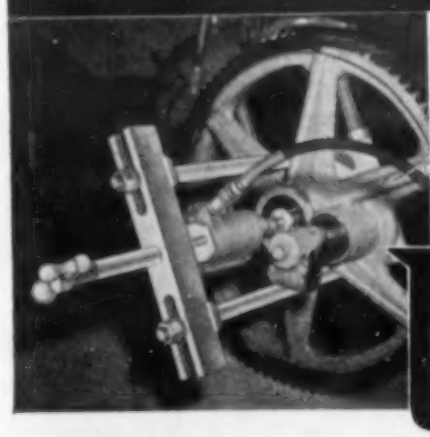
Write for NEW Bulletin No. 40

THE E. W. BUSCHMAN CO.
4447 Clifton Avenue, Cincinnati 32, Ohio
Representatives in Principal Cities

PRODUCE MORE ... FOR LESS
Buschman Conveyors

If you write maker identify as IEN - 3979

PUSH . . . PULL 75% FASTER 90% EASIER



WITH THE CENTER HOLE OTC

50 TON HYDRAULIC PULLER

Removes or installs bearings, gears, pinions, shafts, studs, wheels, pulleys, etc.—75% faster and 90% easier. This new OTC 50 ton ram is completely portable (weighs only 45 lbs.)—has remote control pump—interchangeable ram heads—and can be used as a production holding fixture. Also available in 17½ and 30 ton sizes. *Booklet describes complete line and uses of OTC equipment.*

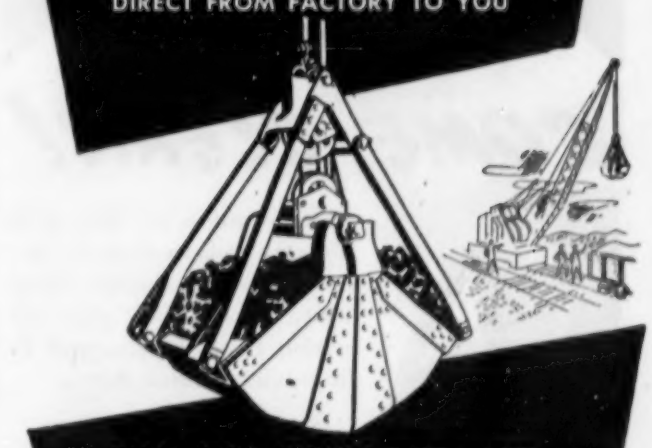
WRITE FOR FREE BOOKLET

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINN.

If you write maker identify as IEN - 3980

BROWNHOIST BUILDS BETTER BUCKETS —for less money

DIRECT FROM FACTORY TO YOU



ROPE-REEVE, POWER WHEEL AND LINK TYPE

Write for illustrated catalogue

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN

146

If you write maker identify as IEN - 3981

Drill More Holes Per Hour In ANY Pattern . . . On ANY Drill Press

with a *Adjustable* MULTI-DRILL

DRILLS 2 to 8 HOLES at ONE STROKE

Increase production up to 800% . . . save time, cut costs. MULTI-DRILLS make *any* drill press produce *more*. Attached without alterations or special tools. Quick, easy setups of universally adjustable spindles give you more flexibility . . . wider application. Handles any hole pattern within 9" circle; centers close as ½". Extension Spindles available to increase working area to 22½". Special adaptations available.

model 900

DRILLS ANY HOLE PATTERN

See us at
Booth No. 823, ASTE Show
Philadelphia, Pa.

COMMANDER MFG. CO.
4219 W. Kinzie St. • Chicago 24, Illinois

Product of *Commander* . . . Builder of Production Tools

If you write maker identify as IEN - 3982

Severance CARBO-MILLS GROUND-from-the-Solid

The all-purpose CARBIDE mill at LOW cost. Use them same as you would High Speed mills or Rotary Files — Same machines — Same speeds (or higher). No more, time consuming. "kid-glove" care. Just chuck them up in your regular equipment and watch these RUGGED CARBO-MILLS go to work!

SOLID CARBIDE CUTTING HEADS

CARBO-MILLS ASK NO SPECIAL FAVORS

3/32" SHANKS

7 Standard Numbers, featuring REAL cutting teeth to remove stock faster over long periods of use—as well after regrinding as when new.

CARBO-MILLS by the ORIGINATOR of Ground-from-the-Solid Mills

IN PORTABLE TOOLS

1/8" SHANKS
12 STANDARD NUMBERS
THE POPULAR WORK BENCH SET

NO PROBLEM OF TOOTH CHIPPING OR BRAZE-FAILURE

CARBO-MILLS PREFERRED BY OPERATORS!

1/4" SHANKS

20 STANDARD NUMBERS

IN MACHINE TOOLS

20 Standard Numbers (only 9 illustrated) cover the widest possible range of uses. Don't continue losing valuable time and money; replace your less efficient Rotary Files with these longer lasting, faster cutting, stamina possessing, CARBO-MILLS at the earliest possible moment!

LAST UP TO 75 TIMES LONGER THAN ROTARY FILES OF HIGH SPEED

DIE MAKERS! ASK FOR THIS SET

Furnished to you in a sturdy wooden case, Di-cor Set No. 40 is a set of 8, ¼" shank CARBIDE mills designed and instituted specifically for you, the Tool and Die Maker. Specially selected shapes — Special tooth patterns and cuts for all types of precision Tool and Die work. You will ply your skills easier and faster than ever before with these personal finishing mills. These CARBIDE mills need absolutely no coddling and will win their way to the the most favored spot on your Work Bench! Send for complete information and prices today! Ask for Leaflet No. 645

GROUND-from-the-Solid

REGRINDING — Due to CARBO-MILLS being made of Solid Carbide repeated savings are made possible through successive regrinds.

INVESTIGATE NOW!

FOR COMPLETE INFORMATION AND PRICES SEND FOR BULLETIN CM.

SEVERANCE TOOL INDUSTRIES, INC.
740 Iowa Avenue • Saginaw, Michigan

If you write maker identify as IEN - 3983

Model 218

Defense orders are coming to the clean plants because they can handle production efficiently. Be sure your plant operation is not handicapped by litter, dirt or other debris.

Send today for important Doyle Vac-It information. There's no obligation.

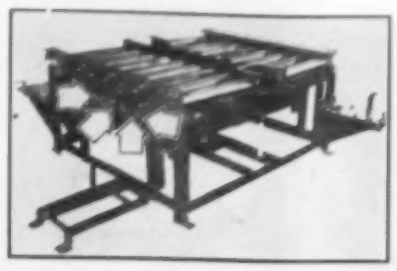
Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Mich.

If you write maker identify as IEN - 3984

If you write maker identify as IEN - 3985

CONVEYING . . Transfer section moves packages between roller lines

Source: ALVEY CONVEYOR MFG. CO.
9301 Olive St. Road, Dept. IEN, St. Louis 24, Mo.



Built to order

New section applies in two parallel lines of live roller conveyor to pick up packages moving along one line, to carry them at 90 deg. to their previous direction of travel and deposit them on the other roller line. The action is accomplished by a set of V-belts mounted on sheaves. They rise up between the section rollers and pick the packages up for the cross-wise movement. The section can be controlled by limit switches or photoelectric equipment to actuate a pneumatic cylinder that raises and lowers the V-belt assembly. Application is in a specified conveyor installation.

If you write maker identify as IEN - 3986

ADHESIVE . . Thermosetting liquid for metal and non-metallic materials

Source: H. V. HARDMAN COMPANY
571 Cortlandt St., Dept. IEN, Belleville, N. J.

Free sample upon request

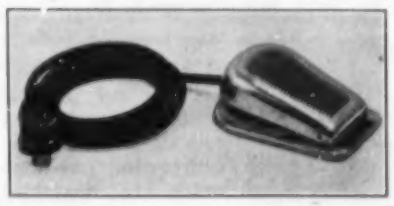
Nylon can be bonded to a variety of metallic and non-metallic materials by means of the company's new Phenoweld thermosetting adhesive. Metals can be bonded to metal or to other materials. Heat can be employed to promote the action. The liquid is non-tarnishing.

Application is by brush, spray or dip to the two faces that are to be adhered. When all of the solvent has evaporated, the adhesive is tack free and remains that way. The parts to be assembled are held together under gentle pressure. No primer is required.

If you write maker identify as IEN - 3987

SWITCH . . Foot operated rates 10 amp. on 110 volt ac. circuit

Source: KRISER CORPORATION
154 Eleventh Ave., Dept. IEN, New York 11, N. Y.



Polished aluminum housing

Model 42A is a new controlled contact foot operated switch for instant make and break. Model 42 is a similar unit with a two prong plug for use with the company's remote control timing equipment. Model 42A can be employed to control small motors and similar electric circuits. It is furnished with a heavy duty series plug. It lists at $8.50 in single-pole single-throw construction and at $9 in single-pole double-throw design. Model 42 lists at $8 and $8.50 in the two contact arrangements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3988

If you write maker identify as IEN - 3989

Something better in WELDING CARBONS!

Where welding operations require high current values for the size electrode being used, Stackpole copper-coated graphite electrodes assure better welds plus maximum economy. They increase current-carrying capacity. They provide better contact between holder and electrode. They reduce the amount of tapering required, last longer and produce better welds. Send details of your application for recommended grade and copy of Stackpole Welding Catalog 1B.

STACKPOLE CARBON CO., St. Marys, Pa.

STACKPOLE

WELDING ELECTRODES • WELDING PLATES AND RODS • WELDING PASTE • BRAZING CARBONS • RESISTANCE WELDING TIPS • BRAZING BOATS AND TRAYS.

If you write maker identify as IEN - 3990

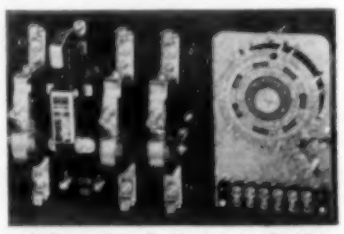
LUMENITE MAGNETIC SWITCHES

For Heavy Electrical Loads Operated by Lumenite Time Switches, Liquid Level Controls, Interval Timers, Electronic Timers, Electronic Switches, or other controls.

To meet the demand for better, more dependable, longer life and trouble-free operation, Lumenite offers a complete line of *Magnetic Switches—Transfer Switches* and *Reversing Switches.* Heavy electrical loads such as pumps, flashing signs, flood light or area lighting systems, emergency power loads, laundry or industrial machines are safely handled by these improved switches. All types—all capacities.

Most advanced construction assures long life of heavy duty service with little or no attention.

SPECIAL — If you have an unusual operation or power control, write us your requirements.



Write for Bulletin M S-451

Lumenite Electronic Co.
407 S. Dearborn St., Chicago 5, Ill.

If you write maker identify as IEN - 3991

GOOD NEWS FOR GLOBE VALVE USERS

FAMOUS OSTLIND VALVES *now called* **"GYROSEAL"** *are back*

Thousands of satisfied users report their original Ostlind Valves still on the line after years of exceptional use. GYROSEAL Valves retain the exclusive patented features. The disc revolves freely, keeping particles in suspension while the disc gently laps the seat for perfect closure.

Materials now used in GYROSEAL Valves assure trouble-free use not only in steam lines but also where the most corrosive fluids are involved.

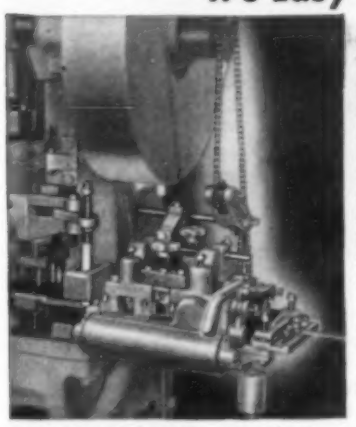
Write for Fully Descriptive Brochure

THE RICHMOND FOUNDRY & MANUFACTURING COMPANY, INC.
DEPT. B, RICHMOND 20, VIRGINIA
Exclusive Producers of the GYROSEAL Valve

If you write maker identify as IEN - 3992

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

4472

WITTEK Reel Stands

Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

Write for full particulars

WITTEK Manufacturing Co.
4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

If you write maker identify as IEN - 3993

FOR HANDLING BULK MATERIALS
THE NEW

Front End Loader

BY WESTINGHOUSE AIR BRAKE COMPANY

- ★ Dumps from 6 ft. off ground
- ★ Turns in radius of 74 inches
- ★ Reduces reversing time 95%
- ★ Rocks bucket to speed loading

• Every improvement in this new Westinghouse Front End Loader helps to reduce the cost of handling bulk materials in foundries and breweries, in chemical, cement, and fertilizer plants.

YOU LOAD FAST. You can fill the bucket evenly and fully in one pass by rocking it into the load. You can dump from a 73" position—20" higher than most comparable machines; this gives the operator an unobstructed view of his work, and helps speed material handling. Control levers for rocking, lifting, and dumping are located at the steering wheel right at the operator's finger tips.

YOU MOVE FAST. New planetary reversing clutch type transmission and direct-coupled integral transmission and driving axle shorten the wheel base and make it possible to turn the ½-⅝ yard model in a radius of only 74". This new transmission, with spring-loaded clutches running in oil, cuts normal reversing time by 95%, provides traveling speeds up to 6.25 mph forward and 7.25 mph in reverse. Easy maneuvering, and fast travel trims man-hours from any bulk loading operation.

GET COMPLETE DETAILS. We have prepared a brochure that completely describes this new Westinghouse Front End Loader; it gives complete dimensions and specifications. Send for your free copy today.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.

Manufacturers of air compressors, pneumatic cylinders, actuators, air control devices of all kinds, and engineered pneumatic control systems.

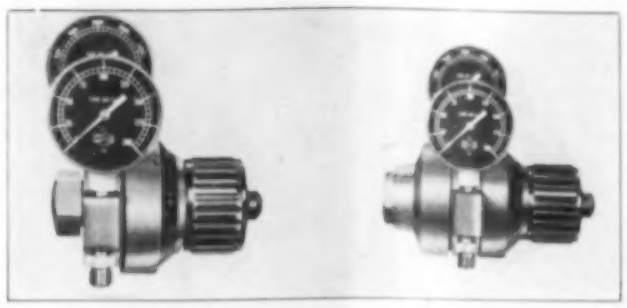
Factory Branch: Emeryville, Calif.

In Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

If you write maker identify as IEN - 3995

VALVE . . Pressure regulator to control flow of compressed gases

Source: AIR PRODUCTS INC.
Box 538, Dept. IEN, Allentown, Pa.



Underwriters' Laboratory Approved

Series 1200, for single-stage operation, to the left in the illustration, and Series 1100 for two-stage operation, to the right, are new regulators for use on oxygen, fuel gases, inert gases. Two gages are provided on each assembly, the high pressure unit reading to 4,000 lb. except in the case of fuel gas regulators which read to 500 lb. maximum. Adjustment is made by turning a knob on the side of the housing.

The adjusting mechanism is mounted on ball bearings and is protected against dirt and grit. The housings are made of forged heat treated aluminum alloy including the bonnets and spring cases. A sintered metal filter is included. A nylon seat is standard in the oxygen regulator. There is also a spring loaded safety relief and a positive stop to limit delivery pressure.

If you write maker identify as IEN - 3996

TESTING . . Electronic instrument determines per cent hydrogen in a gas

Source: TALLER-COOPER INCORPORATED
56 Washington St., Dept. IEN, Brooklyn 1, N. Y.

Indicates or controls

Instant and continuous reading of the hydrogen content in an atmospheric gas is provided by this new Hydrogen Analyzer. It has been developed for use in refinery processes where the concentration of hydrogen must be known, as in the catalytic cracking of gas oil. It also serves to warn against over concentration of hydrogen in the atmosphere.

A specific amount of hydrocarbon gas is continually withdrawn by the analyzer from a reforming stream and is mixed with a given volume of air. The mixture is passed through a filter to remove impurities and the clean mixture is directed into a heating block containing the analyzer cell. A catalytic agent, over which the gas passes, serves to trigger a chemical reaction turning the hydrogen-air mixture into water to create additional heat within the cell.

This heat change produces a voltage that is relayed to the recording mechanism where it is read in terms of hydrogen concentration. The indicating signal can be employed also to control hydrogen concentration in the reforming stream.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3997

Drill Holes within .001" Accuracy with the Master Optical CENTER LOCATOR

Speediest—Simplest—most accurate method of locating centers and drilling holes. For a decade, machinists have been drilling and spacing holes with the Center-Locator to within .001". Just the thing for drilling round holes in thin material . . . avoiding drill run-outs . . . counter-boring holes with an ordinary drill. Makes your drill press do the work of a jig boring machine!

Easy to operate: Simply lay out your work with a height gauge, locate center through the powerful magnifier, then replace the magnifier with any of 16 drill bushings furnished.

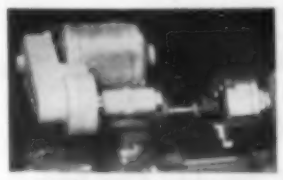
38.50 postpaid or from your dealer. Unconditionally guaranteed.

Bulletin on request

MASTER SPECIALTY CO. INC.
3725 Monitor Avenue
Minneapolis 16, Minnesota

Affiliated with Specialty Products Co.

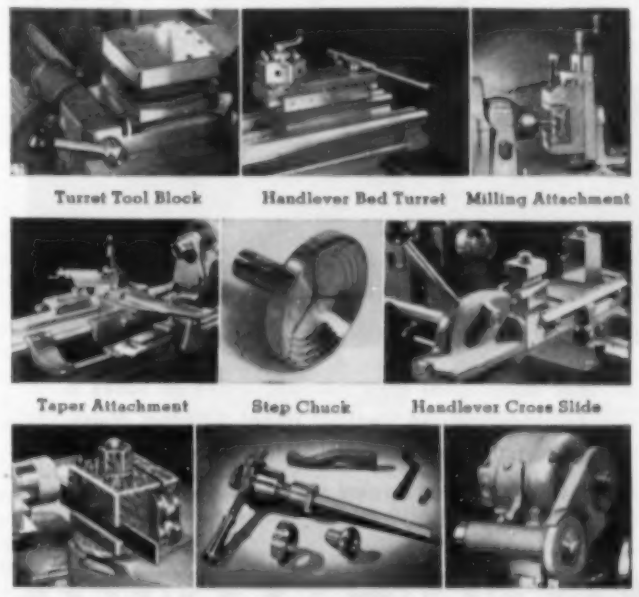
If you write maker identify as IEN - 3998



Internal Grinder

SOUTH BEND Lathe Attachments

- *Increase Lathe Versatility*
- *Simplify Difficult Jobs*



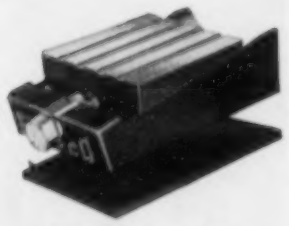
Turret Tool Block | Handlever Bed Turret | Milling Attachment
Taper Attachment | Step Chuck | Handlever Cross Slide
10-in-1 Tool Holder | Handlever Collet | External Grinder

WRITE FOR CATALOG 5102 **SOUTH BEND LATHE**
Building Better Tools Since 1906 • SOUTH BEND, INDIANA

If you write maker identify as IEN - 3999

Improved Empco JACKS are stronger!

SAVE TIME SETTING UP AND LEVELING YOUR MACHINES WITH FAST, ACCURATE, SELF-ALIGNING LEVELERS!



Style JD Wedge type

Style JS Screw type

You can meet hurry up demands for relocation of machinery quickly and easily with improved EMPCO JACKS. You just raise the machine enough to slip EMPCO JACKS under the base (the number depending on the size of the machine). Turn the adjusting screw up or down until the level indicator reads "zero," and the job's done.

To reduce vibration, VI-SORB mounting pads are available with each style EMPCO JACK. Write for specifications and prices today.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN - 4000

New DRY TAMP PERMAMix Floor Patch

Don't stop traffic to repair floors—use Permamix, the new all-temperature DRY TAMP floor patch.

DRY TAMP MEANS SPEED • No sticky mass to dig out of the drum or to handle • Permamix dry pours • sets instantly • feather edges perfectly • no production delays • non-skid surface.

ALL TEMPERATURE • Won't freeze • can be stored or used in any temperature • will store indefinitely • a stock room item • will not "set" in drum whether open or covered. Mistakes just can't happen. Tamp in place and traffic rolls.

CUTS MAINTENANCE COSTS on concrete, brick, tile or asphalt floors • no special equipment or skill needed • a one man job • comes in durable 50 lb. net wt. fibre drums • solve your floor patching problems for good.

Write for Details Now!

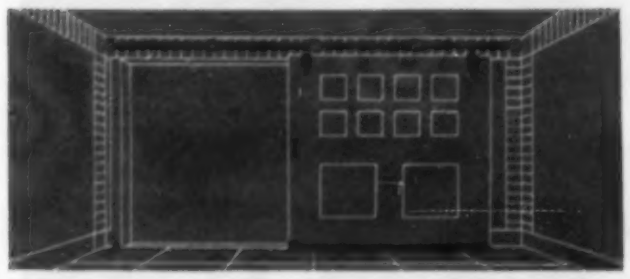
PERMAMIX CORPORATION
230 N. LaSalle Street • Chicago 1, Illinois

If you write maker identify as IEN - 4001

COBURN

SLIDING DOOR HARDWARE

smooth, easy operation . . . trouble-free life for both new and remodeling jobs



For additional information, write to Sales & Engineering, 56 Sterling Street, Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

2007

COBURN PRODUCTS
PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION
CF&I

If you write maker identify as IEN - 4002

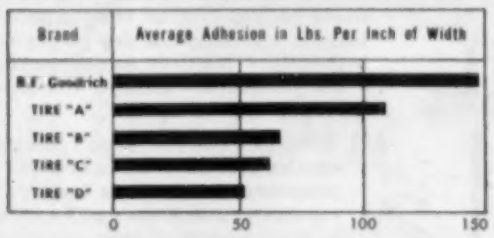
B.F.Goodrich

FREE TIRE AND WHEEL ANALYSIS can cut your tire maintenance costs 20% or more

TIRE maintenance costs cut 20%. Total tire costs lowered as much as 50%. Such savings have been reported by industrial tire users across the country through the use of the B. F. Goodrich Tire and Wheel Analysis Plan! Simply contact your BFG retailer or mail the coupon below. Without cost or obligation a trained B. F. Goodrich man will analyze your materials handling operations and make recommendations which will cut your tire and maintenance costs. A special TW Analysis is available for industrial equipment manufacturers.

DO YOU HAVE THIS PROBLEM? Poor adhesion of rubber to steel caused this tire to fail prematurely. The chart below, based on extensive comparison tests of leading makes of tires, proves the superior adhesion qualities of B. F. Goodrich solid industrial tires.

Tests Prove B. F. Goodrich Adhesion Best



The B. F. Goodrich Company
Tire & Equipment Division
Dept. TW-381, Akron 18, Ohio
Please send me:
☐ Additional information on your Tire and Wheel Analysis Plan
☐ Free copy of "Industrial Tire Guidebook"
☐ Free copy of "How to Get Extra Service Out of Solid Industrial Tires"
Name
Company
Street
City Zone State

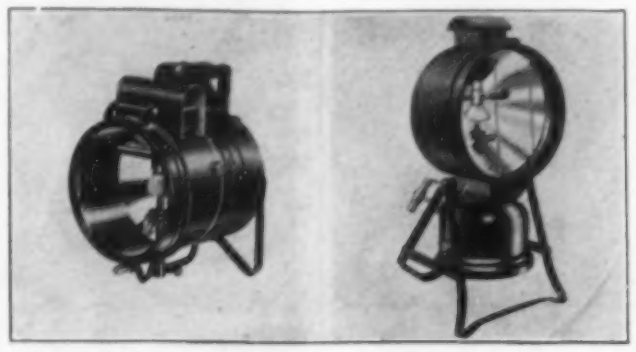
Specify B. F. Goodrich tires when ordering new equipment

B.F.Goodrich

If you write maker identify as IEN - 4004

LIGHTING . . Portable floodlights with kerosene or diesel oil elements

Source: WM. W. LEE & SON
20 E. Jackson Blvd., Dept. IEN, Chicago 4, Ill.



Made in England

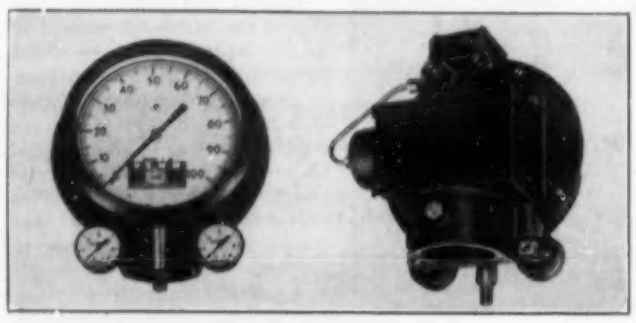
Model AL-21, with 2,000 reflected candle power, and Model FL6, rating 5,000 candle power, are new portable Tilley floodlights for industrial use. They have been available through the company to the construction field for the past two years, now are offered for application in industrial plants.

Dimensions of the smaller unit are 9 by 9 by 11½ in. and weight is 7½ pounds. The reflector is 7 in. in diameter. A fuel tank at the rear holds 1½ pt., sufficient for 12 hr. of continuous operation. The larger unit employs a fuel tank holding 6 pt., sufficient for 40 burning hours. Its dimensions are 14½ by 11½ by 26 inches. It is equipped with a 14-in. reflector. It can be assembled on a stand, as shown in the illustration, or on a tripod for elevation between 5 and 8 ft. above floor level. Both assemblies employ a mantle as the light source. List price ranges from $36 to $90.

If you write maker identify as IEN - 4005

CONTROL . . Pneumatic transmitter actuates remote pressure instruments

Source: PENN INDUSTRIAL INSTRUMENT CORP.
4110 Haverford Ave., Dept. IEN, Philadelphia 4, Pa.



For process indication and control

Air pressure, ranging from 3 to 15 lb. or 5 to 25 lb. to specification, is transmitted by this new unit to remotely positioned indicating, recording and pressure controlling instruments. The transmitter is combined with a bourdon pressure gage measuring 6 or 8½ in. in dial diameter. It is available for ranges within an overall between vacuum and 10,000 pounds. The controlled pressure can be transmitted for distances to 1,000 ft. for remote indication or recording and to 400 ft. for control action. Mounting is on a 2-in. pipe pedestal, a wall or a panel as required by the installation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4006

CLEANS METAL PARTS
BETTER • FASTER • CHEAPER

NEW LOW COST BENCH MODEL JET BLAST

BENCH MODEL JET BLAST
Other sizes are available

SAVES UP TO 60% IN LABOR COSTS

JET BLAST REMOVES Rust, scale and Foreign Deposits from Dies, Molds, Tools or other precision articles without dimensional alterations. Increases adherance and bonding qualities of paint, porcelain, rubber, electroplated metals and a host of other materials . . . Equally effective for cleaning threads for close, smooth fit.

JET BLAST will give any desired finish on flat or irregularly shaped objects . . . Sharp edges are retained.

JET BLAST is excellent for light burring on hard to-get-at surfaces.

JET BLAST materially increases tool life when used for honing cutting faces after grinding . . . Eliminates costly hand labor.

JET BLAST IS A TOOL ROOM NECESSITY

SEND FOR BULLETIN

DISTRIBUTORS:
A few territories are still open.

R·W·RENTON and Company
877 ADDISON ROAD • CLEVELAND 3, OHIO

If you write maker identify as IEN - 4007

TESTING . . Heating apparatus reads melting temperature to 300 deg. C.

Source: FISHER SCIENTIFIC CO.
717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

List is $115

Fisher-Johns designates a new melting point apparatus in which crystalline samples of various materials are placed between cover glasses on a small heating stage to be brought up to temperature at which they will melt. The heating rate is set on a per cent power input dial. The crystals are observed through a low power lens. They are illuminated by a spot light directed at the top cover glass.

A thermometer, attached to the side of the heating stage, reads in a range of 20 to 300 deg. C. Readings are accurate within 2 deg. C., without calibration, and within 0.5 deg. C. with calibration. Operation for the electric heating element beneath the stage is on 110-volt ac.

If you write maker identify as IEN - 4008

STEEL . . Low carbon flat stock, 190 sizes in 24-in. lengths from stock

Source: MARSHALL STEEL CO.
Box 108, Dept. IEN, La Grange, Ill.

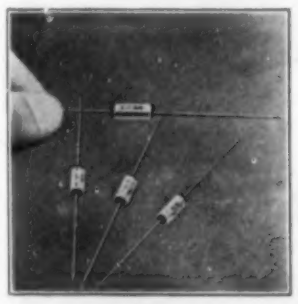
Stock catalog upon request

The company announces addition of a new low carbon ground flat stock to its previously developed Aristocrat line of tool steel ground flat stock. The new material is carried in stock in 24-in. lengths and 190 sizes. Sizes available to specification range from 0.088 to 6 in. in thickness, to 25 in. in width and to 98 in. in length. The new material can be used in a good many places where tool steel has previously been employed. Where it can be applied, it can effect a considerable saving in material cost.

If you write maker identify as IEN - 4009

CAPACITOR . . Tantalum foil unit particularly for transistor circuits

Source: CORNELL-DUBILIER CORPORATION
1000 Hamilton Blvd., Dept. IEN, South Plainfield, N. J.



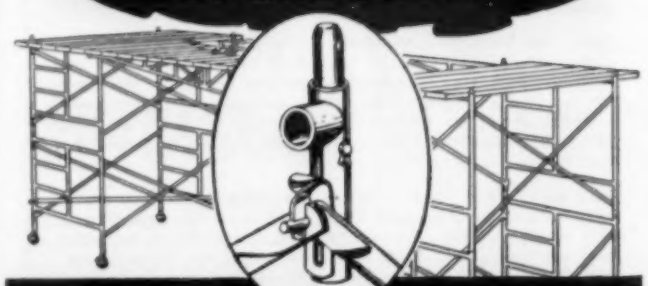
Bulletin 525

Type TAN "sub-miniature" designates a new tantalum foil electrolytic capacitor. It is available in 35 units, each measuring $\frac{3}{16}$ in. in length by $\frac{1}{16}$ in. in diameter with capacitance ranging from 0.01 to 8.0 mfd. and from 3 to 150 wvdc. The unit is available in polarized and non-polarized types. Application can be made for an operating temperature range between minus 55 and plus 85 deg. C. Standard tolerance is within 20 per cent except in certain cases.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4010

get your FREE SAMPLE SPEEDLOCK



SEE FOR YOURSELF
HOW SPEEDLOCK MAKES WACO
"THE WORLD'S FASTEST SCAFFOLDING"

Send for your sample Waco *Speedlock* today. See how Waco Scaffolding saves you money on every scaffolding job. With exclusive *Speedlock*, Waco Scaffolding goes up faster . . . comes down faster . . . Saves you money on unproductive scaffolding erection time. No wing nuts or cams to tighten, come loose, break or lose. Get *your* sample Waco *Speedlock* and descriptive scaffolding literature. Write now!

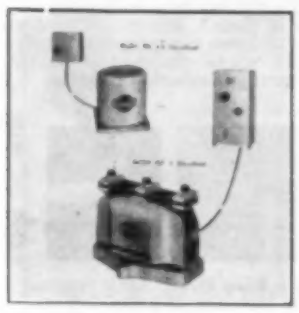
Limited number of distributorships available—Write today.

WACO *Manufacturing Company*
3567 WOODDALE AVE. SO. • MINNEAPOLIS 16, MINN.
ARMSON IRON WORKS, LTD. WINDSOR, ONTARIO
WACO-MAY COMPANY LOS ANGELES, CALIFORNIA

If you write maker identify as IEN - 4011

VIBRATING . . Magnetic design for light duty use on bins and hoppers

Source: CLEVELAND VIBRATOR CO.
2828 Clinton Ave., Dept. IEN, Cleveland 13, Ohio



For free flow

Model MC is a new electromagnetic vibrator with a spring loaded armature. It imparts light duty vibrating action on the side of a bin or hopper to prevent "arching" in bulk and powdered materials. Operation is regulated by a rheostat and rectifier for operation on 110 or 220-volt single-phase ac.

Two models in the line list at $42 and $75. The control assembly adds $15 and $35. The larger of the two measures 8¼ in. in base length, 6⅛ in. in greatest width, 6½ in. in height. It weighs 16½ pounds.

If you write maker identify as IEN - 4012

CONTROL . . Pneumatic transmitter actuated by Hagan Ring Balance meter

Source: HAGAN CORPORATION
323 Fourth Ave., Dept. IEN, Pittsburgh 22, Pa.

For flow, pressure, or temperature

Process variables picked up and recorded by the company's Ring Balance meter are transmitted to or from a remote point, for indicating, recording or controlling action, by a new signal transmitter that controls a proportional pneumatic signal pressure. The transmitter applies on the meter and is available with maximum signal pressure ranges of 15, 30 and 60 lb. per sq. in. taken from a continuous supply of compressed air from a plant source.

The transmitter is actuated by movement of the pen arm or indicator follower in the meter so no perceptable load is applied on the sensing element. The pen movements are transmitted to a baffle which moves about a fixed pivot to throttle air discharge from the control nozzle.

If you write maker identify as IEN - 4013

TRUCK . . Hydraulic mechanism designed to operate 8½-ton dump body

Source: GALION ALLSTEEL BODY CO.
Dept. IEN, Galion, Ohio

Includes pump

Model 740 is a new hydraulic dump body hoist assembled in a steel sub-frame with underbody double lift arms. Piston diameter is 2½ inches. Stroke is 19⅛ inches. The hydraulic circuit holds 4.3 gal. of oil. Piston stroke oil displacement is 765 cubic inches. The 7.156-in. cylinder has a mounting height of 14 in. and provides a 50-deg. dump angle for a 10-ft. 4-yd. body.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 4014

To control AIR . . . ANYWHERE use NP Control Valves

INVESTIGATE National Pneumatic Co., Inc.'s wide range of air control valves, from 0 to 125 p.s.i. with ¼" porting, in 3 way and 4 way types. NP valves are modern in design, ruggedly constructed and require minimum maintenance.

PILOT CONTROL VALVE
Offers automatic retraction or continuous cycling when used in a system incorporating remote control valves.

DC-31810 HAND OPERATED CONTROL VALVE
Simple design for long, dependable service. Sturdy construction, easy action.

DC-39970 FOOT OPERATED CONTROL VALVE
Rugged, sure, dependable action. Pedal housing assures *safe* operation.

THERE IS AN NP VALVE for every air-control job. In addition to the valves shown here, NP also makes the following types of valves: Pressure regulating; speed adjusting; quick release; ratchet. Write today for bulletins to Industrial Actuators and Controls Division.

NATIONAL PNEUMATIC CO., INC. AND **HOLTZER-CABOT** DIVISIONS

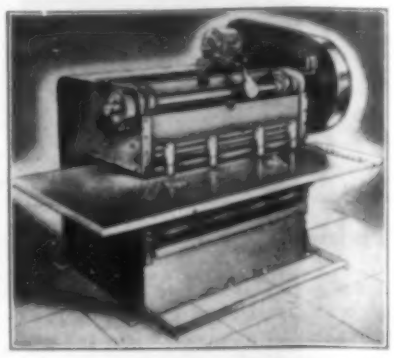
125 Amory St., Boston 19, Mass.
Sales Service Representatives in Principal Cities throughout the Free World

Designers and manufacturers of mechanical, pneumatic, hydraulic, electric and electronic equipment and systems

If you write maker identify as IEN - 4015

SHEARING . . Squaring machine for metal and non-metallic sheet stock

Source: MANCHESTER MACHINE CORP.
Box 724, Dept. IEN, Manchester, Conn.



Patent No. 2,222,095

Two sizes, known as No. 16 and No. 52, have maximum cut-off capacity of 16 and 52 in. in this new squaring shear. It will handle Duralumin in gages to ⅛ and ¼ in., mild steel to 3/32 and ⅛ in., stainless steel to 1/16 and 3/32 inches. Blade length is 16 and 52 inches. Open throat depth is 7½ and 24 inches. Table dimensions are 14 by 36 in. and 24 by 84 inches. Drive is by a 1-hp. motor for the smaller machine, a 2-hp. unit for the larger one. Both are geared head design. Flywheel speed is 120 rpm.

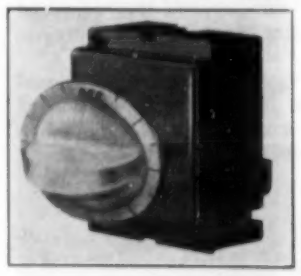
The drive is equipped with a multiple point non-repeat punch press clutch. It can be set to make one cut each time the foot treadle is depressed or to operate continuously. Speed is 120 strokes per min. in the latter case, 60 strokes per min. in the former. The shear blades are made of tool steel with four cutting edges. The work table carries holes to mount guides. The cut-off work falls into a pan that slopes toward the front beneath the table.

Adjustments are located at the front where cut-off length can be set by turning a crank that positions the back gage. Measurements for this adjustment are indicated on a steel tape. The shearing head is vertically adjustable to position the upper blade for exact work thickness. A control permits quick change-over from continuous to non-repeat action and a safety throw-out disengages the clutch.

If you write maker identify as IEN - 4016

SWITCH . . Element control unit for electrically heated appliances

Source: PROCTOR ELECTRIC CO.
3rd & Huntington Park, Dept. IEN, Philadelphia, Pa.



UL Approved

Model 504 is a new "instant heat" switch that will impress a 5,000-watt input on a 1,2500-watt heating element to bring it up to temperature quickly from a cold start. As the element reaches proper temperature, the switch changes its connections automatically and sustains the selected electric input at 1,250 watts on 110 volt current.

The switch applies in a 220-volt circuit. It employs a bi-metal control element that regulates the starting time and the running cycles. It holds the high input for about 30 sec. before it switches over. Turning the unit to "off" position at the end of a heating interval presets it for the next fast start. A temperature compensator neutralizes the effect of ambient changes on the control bi-metal. The assembly measures about 3 by 2¼ by 1¾ in., has a heat resistant Bakelite housing with a metal cover.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

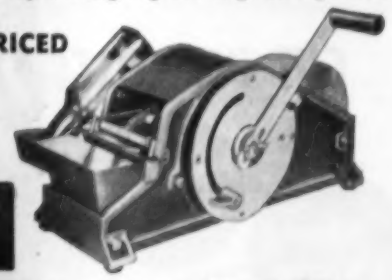
If you write maker identify as IEN - 4017

Another Triumph of Derby's Designing and Engineering Skill!

THE MEDIUM PRICED

Super **DERBY**

"152"



SENSATIONAL DISPENSER DELIVERS PREDETERMINED LENGTHS OF GUMMED TAPE UP TO 30", (1" TO 3" WIDE)

Priced far lower than any machine of comparable quality now on the market, the new Derby "152" has amazing versatility and durability. Its exclusive Derby "Moisture Control System" provides a completely moistened tape every time — and its unique brush design makes unnecessary the usual two brush arrangement. For industrial packaging, specify Derby "152".

A DERBY FIRST
Stainless steel cut-off blade, guaranteed for life of machine.

LOOK AT THESE QUALITY DERBY FEATURES

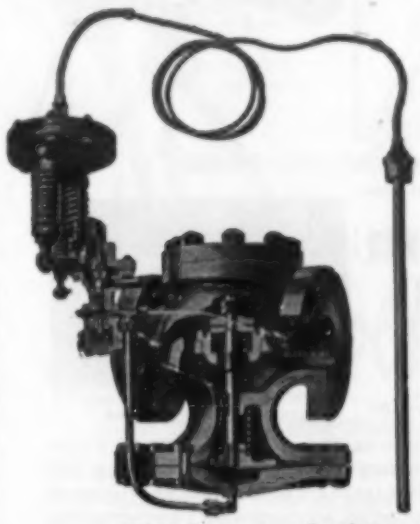
- Exclusive spring clutch feed
- Visible auxiliary water reservoir
- Adjustable, vari-length handle
- Larger interlocking side frame construction
- Measuring feed stop
- Automatic tape cut-off
- Visual measuring scale
- Water heater available at extra cost

See your dealer or write

DERBY SEALERS INC. Derby, Conn.

If you write maker identify as IEN - 4018

LOW COST Temperature Control



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm— under usual conditions never requires replacement.

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SE-106

Spence

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 4019

Automatic Liquid Proportioner

Are you feeding one liquid into another on a fixed percentage basis? If so, why not do it both automatically — and economically?

This Rockwood Eductor, used in fire fighting for automatically introducing 3 parts of Rockwood FOAM into 97 parts of water, can also be used for many other purposes. It is "tapped" into the line containing the basic liquid. Then it automatically introduces the other liquid into the line at a predetermined rate. Excellent for dust control and many other uses.

Send us your particular liquid-proportioning problem and Rockwood engineers will gladly show you whether the Rockwood Eductor can automatically solve it for you.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses
Portable Fire Protection Division
40 HARLOW STREET, WORCESTER, MASS.

If you write maker identify as IEN - 4020

Lightweight-Economical

IT'S THE REVOLVATOR® UPLIFTER ELEVATOR

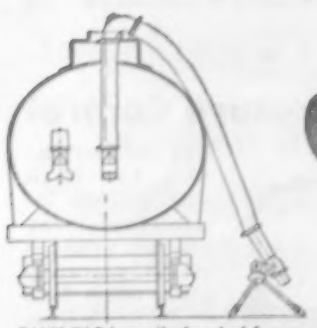
Adaptable for shop use or warehouse handling and ideal for shipping and receiving — the new electric Uplifter is the real buy today in materials handling. In two capacities, 1000 - 2000 pounds, platform sizes 24 x 24 and 30 x 30, lifts of 62 and 65 inches on standard models — the Revolvator Uplifter can be had powered by a variety of electric circuits ranging from an automobile battery to 220 volt currents.

Priced under all competition, the Uplifter includes all the safety and convenience features that have made Revolvator portable elevators a standard in industry. Get full information today on this new, easy operating inexpensive portable elevator. Remember, too — we build Revolvator Portable elevators to your particular needs.

Write or phone

REVOLVATOR CO.
8759 TONNELE AVENUE, NORTH BERGEN, N. J. • UNion 3-8128

If you write maker identify as IEN - 4021



TANK CAR is easily freed of fumes for workers' safety.

CHEMICAL STILL is here ventilated while being repaired.

KEEP AIR FRESH

in confined places with COPPUS *Design "A" Ventilator*

Improve workers' safety—health—comfort—efficiency. Get rid of dangerous gases, fumes, stagnant air. Coppus Design "A" Ventilator ventilates tanks, tank cars, drums, vats, underground cable manholes, pipe galleries, airplane wing compartments, fuselages. For complete information, write Coppus Engineering Corporation, 144 Park Ave., Worcester 2, Mass. Sales Offices in *Thomas' Register.*

Other "Blue Ribbon" Products in *Chemical Engineering Catalog, Refinery Catalog, Best's Safety Directory* and *Mining Catalogs.*

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 4022

PENETROL saves PITTSBURGH STEEL CO. 1¼ mile steel trestle from destruction under excessive corrosive conditions!

PENETROL PRICES: 5 Gal. $15.75; 30 Gal. $88.50; 55 Gal. $159.50, F. O. B. Hudson, Ohio. Free Literature!

PENETROL® is manufactured by THE FLOOD COMPANY HUDSON, OHIO

PENETROL AIR-DRYING OIL

1¼ miles of steel trestle . . . carrying endless strings of cars loaded with freshly-quenched granulated slag, that drip chemical and acid contaminated water on the structure continually . . . yet it is safe and strong, in every joint and surface, because it's PENETROL protected!

Here's what Jack Moreland, Supervisor of Painting, Pittsburgh Steel Co., Monessen, Pa., says: "This was a rough condition in 1941. We were becoming aware of the fact that thousands of joints, and the large areas of flat surfaces in this trestle, were being subjected to rust and corrosion from many different sources. PENETROL was slushed into all joints and also applied to other pitted and rusted areas, during the time the surfaces were being cleaned for painting. The whole structure was given two coats of paint, each fortified with PENETROL. In 1947, the joints were okay . . . did not need special treatment . . . and we repainted the entire structure with paint to which we had added the protective qualities of PENETROL. In 1954, the joints and general structure still are in good condition, thanks to PENETROL!"

Ever since this outstanding performance, the Pittsburgh Steel Company Monessen Mill has used the PENETROL system of protection on all its steel structures. Here's the method:

(1) Brush, scrape and apply clear PENETROL to all joints and other rusted spots. *It is more important to PENETROL the joints than it is to paint any other part of the structure.*

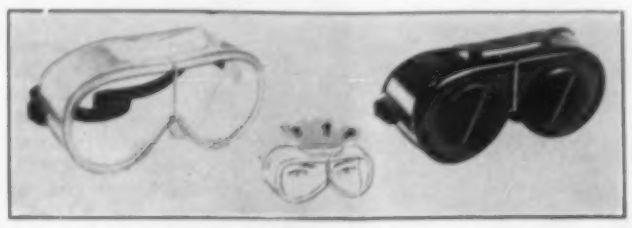
(2) Apply prime and finish coats, fortified with PENETROL.

Use this time-proved, money-saving, structure-preserving PENETROL method to assure protection against rust to all inside, hidden, and exterior surfaces. Order PENETROL now!

If you write maker identify as IEN - 4024

PROTECTING . . Plastic goggle fits face over prescription glasses

Source: WATCHEMOKET OPTICAL CO.
232 W. Exchange St., Dept. IEN, Providence 3, R. I.



"Eye Savers"

Stac-Vent trade names a new soft vinyl safety goggle. It is available in one form to protect against chemical splash, molten metal, sparks and impact and in a second form for arc welding. The vinyl frame, with its pliable edge fins, fits the face and nose contour to close gaps without pressure. Replaceable lenses are held in the frame with a lock bar.

One assembly takes clear plastic lenses or a choice of light, medium or dark green. The welder's goggle takes replaceable 55-mm. round glass filter lenses protected inside and outside by hard plastic cover lenses. The filter lenses are available in shades No. 3, 4, 5 or 6. Both goggles are ventilated.

If you write maker identify as IEN - 4025

PLASTIC . . Resin and steel powder for fixtures, molds, dies, patterns

Source: CHEMICAL DEVELOPMENT CORP.
Endicott St., Dept. IEN, Danvers, Mass.

Bulletin, "Devcon Plastic Metal"

Devcon is a new putty-like material consisting of fine powdered steel and a plastic resin. The mixture molds readily into desired forms immediately after adding to it a hardening catalyst that is supplied for this purpose. The material sets at room temperature, in about 2 hr., holding precise original form without distortion or shrinkage.

It can be sawed, drilled, threaded, ground with conventional metal working equipment. Storage life, prior to addition of the catalyst, is about one year. The material is supplied in 1 and 4-lb. cans and in bulk containers with the correct amount of hardening catalyst and a supply of release agent.

If you write maker identify as IEN - 4026

Smooth acceleration independent of the operator's actions is now available on all Yale & Towne electric industrial trucks equipped with a new magnetic Cam-O-Tactor. The time delay to protect the truck motors acts in the accelerating direction only. The circuit is opened immediately when the operator lifts his foot from the accelerator so there is no delay in slowing down. Information concerning the new control is available from Yale & Towne Mfg. Co., 11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4027

ELASTICONE® GUIDE PIN COVERS

CUT DIE COSTS 25%

Low-costing Elasticone Guide Pin Covers reduce die breakage; protect man & machine — closes the gap between pins and bushings.

Just snaps into place—no installation costs. Manufactured in stock sizes.

Write for full information and literature.

CENTRAL

2204 EAST HUNTINGDON ST. PHILA. 25, PA.

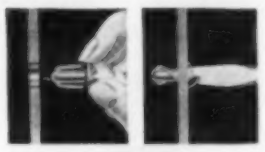
CENTRAL SAFETY EQUIPMENT COMPANY

If you write maker identify as IEN - 4028

Have you a similar use for this 1-piece fastener?

It's a Cabinet Door Strike...Simple to install; eliminates welding and cuts assembly cost. Any head can be designed without affecting fastening principle.

It's a Shelf Support...For ranges or refrigerators—in plastic and metal. Leading appliance makers have achieved substantial installation savings through it.



It's a Blind Rivet...Or a removable fastener. It locks and unlocks with a 90° clockwise rotation. No mating parts such as nuts or receptacles.

It's a Lifter Knob or Dashboard Plug...Plastic Spring-Lock heads are molded around steel inserts, giving strength at point of load or impact. Any shape head can be molded in any color.

What's Your Application?

...Tell us how you can use Spring-Lock Fasteners in your products. We'll be glad to work out the details with you.

Send for more data and *Free Samples* today.

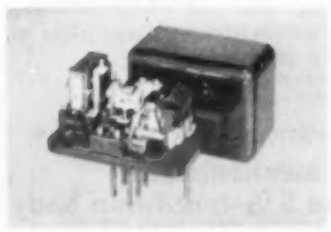
Simmons Fasteners

QUICK-LOCK • SPRING-LOCK ROTO-LOCK

SIMMONS FASTENER CORP., 1758 North Broadway, Albany 1, N. Y.

If you write maker identify as IEN - 4029

TIMERS *immediate delivery from stock*



TIME DELAY RELAY

When coil is energized, 20 ampere contacts are immediately closed. The delay action is accomplished by a Telechron motor with a mechanism calibrated in 15 second steps, adjustable from 15 seconds to 5 minutes. Timer contacts are S.P.D.T. and rated at 12 amps. Instantaneous recycling. 115 VAC coil operation. Dust tight Bakelite case.

TIMER RELAY

Synchronous motor operates relay for intermittent operation of any electrical device. Relay closes once or twice per hour for periods selected on adjustable dial calibrated in minutes. More frequent intervals may be obtained by substituting a simple timing disc. Contacts rated at 15 amps. Master switch and fuse receptacle. Housed in attractive die cast and stamped metal case with hinged door.

Substantial quantities in stock for immediate delivery at considerably less than market prices.

Huge stocks of relays of practically every type maintained for your convenience. Phone your needs . . . 24 hour delivery!

Telephone **SEeley 8-4146**

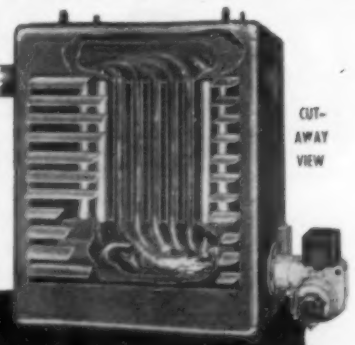
Write for New 1954 Relay Sales Catalog C-5 JUST OUT!

Relay Sales

4721 W. MADISON STREET
DEPT. 9 CHICAGO 44, ILL.

If you write maker identify as IEN - 4030

WHAT MAKES *Delta's* NEW DIRECT FIRED OIL UNIT HEATER SO SUPERIOR?



1. GUN-TYPE BURNER!
2. 220,000 BTU/HR. OUTPUT!
3. ADJUSTABLE LOUVRES!
4. 5,730 CFM AIR DELIVERY!
5. VERTICAL FLUE TRAVEL!
6. SELF POSITIONING BURNER MOUNT!
7. SUMMER AIR CIRCULATION!
8. AUTOMATIC HUMIDIFIER!
9. LOW OPERATING COSTS!
10. FACTORY WIRING & ASSEMBLY!
11. RUGGED CONSTRUCTION!
12. 59 COMMERCIAL APPLICATIONS!

NEVER BEFORE A UNIT LIKE THIS! NEVER BEFORE A DEMAND LIKE THIS!

HORIZONTAL heating jobs. To efficiently heat offices and closed partitioned areas, see the DELTA line of SUSPENDED-FURNACES in various sizes for small or large *CONTACT US RIGHT AWAY FOR DETAILS*

DELTA HEATING CORPORATION, TRENTON 8, NEW JERSEY
In Canada — Kresno-Stamm • Montreal 24, Canada

If you write maker identify as IEN - 4031

go to a SPECIALIST for helical finned heat transfer tubing

- straight lengths
- compact coils for refrigeration condensers
- blast air heating coils
- blast air cooling coils

OVER 100 SIZES IN PRODUCTION

Made to your individual specifications!

ROME
TURNEY RADIATOR COMPANY

200 EAST FRONT STREET ROME, NEW YORK

If you write maker identify as IEN - 4032

Now *time* your jobs AUTOMATICALLY with CALCULAGRAPH!

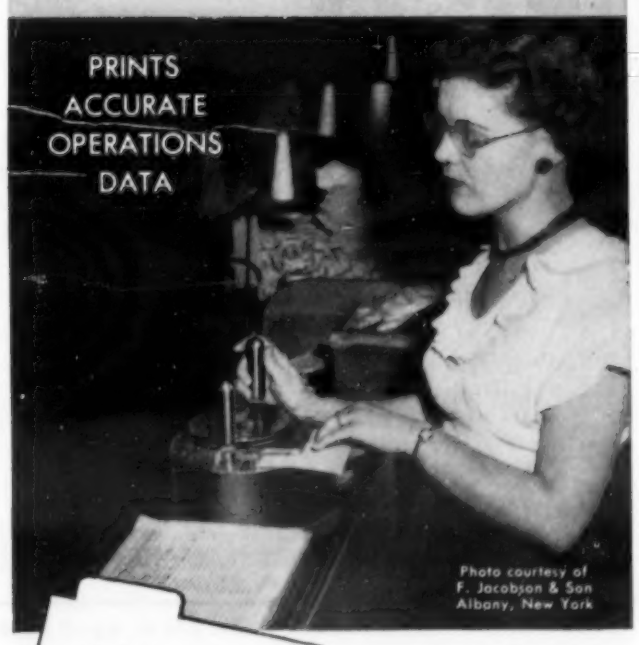


Photo courtesy of F. Jacobson & Son Albany, New York

Prints date..
starting time..
finishing time..
— and total elapsed time!

Save time and eliminate clerical errors with Calculagraph accurate-to-the-minute, printed job time records. Use these data cards for computing costs, estimating on reorders. One Calculagraph can record job time data for an entire shop or department.

NEW! AUTOMATIC DATER!

Standard on all electric models. Automatically changes date — eliminates incorrect dating of records.

ASK FOR COMPLETE INFORMATION, TODAY

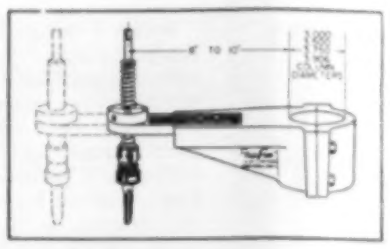
Illustrated literature and sample job cards will be sent promptly on request. Just call or write Dept. 300.

CALCULAGRAPH COMPANY
Sussex St., Harrison, New Jersey
STANDARD OF ACCURACY SINCE 1892

If you write maker identify as IEN - 4034

THREADING . . Lead screw attachment for application on a drilling machine

Source: AUTOMATIC METHODS INC.
965 W. Grand St., Dept. IEN, Elizabeth, N. J.



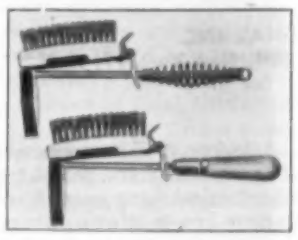
For accurate threads

Lead screws, hardened and ground, are carried in adjustable split nuts in this new Series 500 Auto-Tap tapping attachment. The new design supplements the one previously described IEN-2472-53. It is available with two sizes of support arms with ½ and 1-in. lead screws for a threading range of 80 to 11 pitch for No. 0 to ⅝-in. taps. The lead screw carries a Jacobs chuck at its bottom end. The lead screw moves the tap forward so drag is eliminated from the threading operation.

If you write maker identify as IEN - 4035

HAMMER . . Chipper and brush combined to clean up weld spatter

Source: ATLAS WELDING ACCESSORIES CO.
707 E. Lewiston St., Dept. IEN, Ferndale, Mich.



For heavy duty

New design of the company's Model A combination chipping hammer and wire brush positions the removable brush at an angle to protect the worker's knuckles and to result in even bristle wear. The frame holding the brush is ribbed for rigidity. The chisel head is welded to the frame and handle. A spring secures the brush in the frame and is designed so it can be pulled back to release the brush for replacement or reversal. Two designs are available, one with a wood handle and the other with a wire handle.

If you write maker identify as IEN - 4036

HANDLING . . Steel hopper holds work pieces ahead of a machine

Source: UNION METAL MFG. CO.
1432 Maple Ave., N. E., Dept. IEN, Canton 5, Ohio

Holds about 35 cubic feet

New hopper is mounted on structural legs to stand 81 in. in overall height, 40 in. in width and 46 in. in length. A gate on the front face can be positioned to control feed of work pieces delivered into the hopper from above. The hopper places the work at a convenient lever for an operator at a machine. A truck operator can keep the hopper supplied without interfering with its work feeding purpose.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4037

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM COMPANY

SAND SCREEN—NEW ABRASIVE CLOTH

Use both sides...do 7 to 15 times more sanding per sheet or disc

SAND SCREEN, new open-mesh abrasive cloth by CARBORUNDUM for sanding and finishing, lets the removed material flow right through—instead of loading and glazing as conventional abrasive paper and cloth do. You use *both* sides, for each is uniformly coated with CARBORUNDUM's famous hard, sharp silicon carbide abrasive grain. Lasts from 7 to 15 times longer...gives fast, easy sanding on metal, wood, paint undercoats and sealers. Use it wet or dry...by hand or machine.

SAND SCREEN is available in full sheets, cut sheets and discs—in 180 and finer grit sizes. For hand sanding, full 9" x 11" sheets fold like paper, tear like cloth to any width you desire. Cut sheets fit your air or electric oscillating or vibrating sanders. SAND SCREEN Discs give best results when used wet with CARBORUNDUM's FASTCUT Pad Assembly. Ordinarily, no adhesive is required when sanding flats or slight contours ...the surface of the FASTCUT Pad holds the disc in place.

If you have any sanding and finishing operations where loading and glazing of your present abrasive is a problem—or where considerably less loading would help speed production, it will pay you to investigate SAND SCREEN. Your CARBORUNDUM Salesman or Distributor (listed in the yellow pages under "Abrasives" and "Grinding Wheels") will work closely with you to help you take full advantage of its many cost-cutting features. Call him—or, if you prefer, use the inquiry form provided by this publication; or write to **The Carborundum Company,** Dept. IEN 82-47, Niagara Falls, New York.

"Carborundum", "Sand Screen" and "Fastcut" are trademarks of The Carborundum Company, Niagara Falls, New York

82-47

If you write maker identify as IEN - 4038

SAFETY-PULL RATCHET LEVER HOISTS
10 roller-chain models — 1,500- to 30,000-lb. 2 coil-chain models — 1,500- and 3,000-lb.

CHALLENGER LIGHTWEIGHT ALL STEEL SPUR-GEAR HOISTS
3 models — ½-, 1-, and 2-ton

OTHER SPUR-GEAR HOISTS
22 models — ¼- to 25-ton

In hand hoists — It's Coffing

OVER 80 SIZES AND MODELS TO FILL ALL YOUR NEEDS

Mighty-Midget Pullers 2 sizes — 500- and 1,000-lb.

Hoist Binder 3,000-lb. capacity.

Safety Load Binders 2 models — 3,000- and 6,000-lb.

Low Headroom Hoists 12 models — 1½- to 24-ton

I-Beam Trolleys 21 models — ⅛- to 25-ton

Clevis-Connected Hoists 11 models — ¼- to 10-ton

Differential Chain Hoists 2 sizes — ½- and 1-ton

Extended Hand Wheel Hoists 6 models — ¼- to 3-ton

Army-Type Hoists (plain and geared) 11 models — ¼- to 10-ton

Ask for more information on the units you need from the most complete line of hand-operated hoists. Write Dept. P4.

COFFING HOIST CO. DANVILLE, ILLINOIS

If you write maker identify as IEN - 4039

Shells, beads, or American dollars—no enterprise is successful unless it shows a profit. Kester quality and performance assure you profitable production results at the lowest possible cost. To put more "wampum" in *your* "wigwam," always insist on Kester Solder!

HAVE YOU written for your free copy of the Kester Technical Manual, "SOLDER and Soldering Technique"? Won't you do it today?

KESTER

SOLDER COMPANY
4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 4040

Chicago MOUNTED Wheels

...now even better with **79E BOND**

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

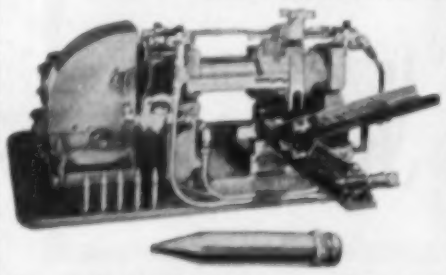
79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & Mfg. Co.
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 4041

AUTOMATIC MARKING

with—
- Motor drive
- Gravity feed
- Air inject and discharge



This newly improved Model No. 9 A M A MARKING MACHINE makes the marking of round parts a wholly automatic operation.

Just as fast as the shells, cartridges, fuses, rods, drills, pins, sleeves, bushings—tubular or solid cylindrical parts, of any metal, can roll down the gravity chute — this ACROMARK MACHINE marks and ejects them. High production — long service. Write for details.

ACROMARK

THE ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 4042

Take surface temperatures quickly, accurately... with the

The handy Alnor Pyrocon is unequaled for quick, accurate reading of all surface temperatures . . . whether surfaces are metallic or non-metallic, flat or curved. Accurate temperatures are easily understood on the Pyrocon's direct reading scale face . . . without interpolation or need of conversion tables. A wide selection of thermocouples and extension arms permits adaptation to many types of service. For complete details and prices, send for Bulletin No. 4257. Illinois Testing Laboratories Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 4043

TO REACH HIGH PLACES SAFELY...

This illustrated folder describes the complete line of Ballymore ladders that are saving time and money and increasing capacity of storage space in business and industry. Send for your free copy today.

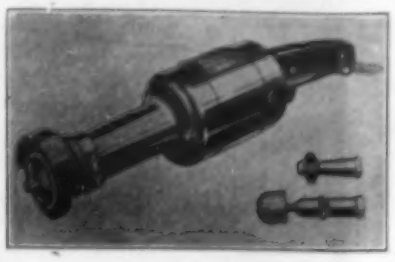
BALLYMORE COMPANY
WAYNE 4, PENNSYLVANIA

Name_____
Company_____
Address_____
City_____ Zone_____ State_____

If you write maker identify as IEN - 4044

GRINDING . . Portable electric tool, universal ¼-hp. motor, 15,500 rpm.

Source: DUMORE COMPANY
1300 17th St., Dept. IEN, Racine, Wis.



Rifle type handle

Series 9 designates this new portable electric grinder. It is for work such as cleaning castings, grinding weld seams, spark testing steel, polishing and grinding heavy and irregular work. A ¼-in. chuck is supplied to take mounted wheels to grind in confined locations. The spindle takes standard wheels when the chuck is not employed.

Drive is by a ¼-hp. universal motor for spindle speed of 15,500 rpm. The motor can be specified for operation on 110 or 220-volt input. The tool weighs a little under 7 pounds. Its rotating element rides in three precision bearings seated in steel inserts cast into the grinder housing.

If you write maker identify as IEN - 4045

MARKING . . Electric etcher and transformer for use on metals

Source: NEWAGE INTERNATIONAL INC.
235 E. 42nd St., Dept. IEN, New York 17, N. Y.

For any metal

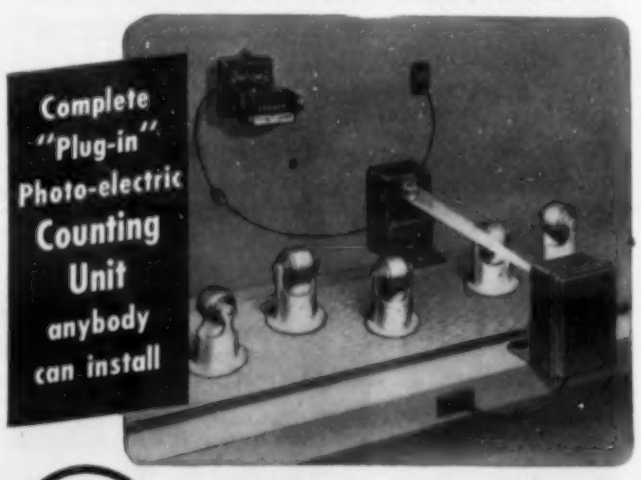
Actograp is a new assembly of transformer and pencil type vibrating marking head. A continuous arc is drawn between the marking tip in the head and a work piece positioned on a grounding plate. The transformer operates on 110 or 220-volt single-phase ac. as specified. It carries a control with which output can be set at 5, 6 or 7 volts for various depths of marking. A screw adjustment at the tip enables the operator to set the point for desired action. The head and a grounding lead connect into the transformer housing.

If you write maker identify as IEN - 4046

Grinding wheel life has been doubled and need for dressing has been reduced by one-half with an attendent 30 per cent increase in production on two Jones & Lamson thread grinders by installation of cutting oil filtering equipment. The equipment, manufactured by U. S. Hoffman Machinery Corp., 219 Lamson St., Dept. IEN, Syracuse 6, N. Y., has capacity to serve four of the grinders since two more are to be installed shortly. Dirty oil flows from the machines to a Magnaflo Model 60 magnetic type filter and from there through a storage tank to pumps serving two pressure filters. Clean oil from the filters flows to a 2,000-gal. oil reservoir which also serves as a means for cooling the oil prior to its return to the machines. The company has prepared a flow diagram showing the equipment. A copy is available on request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4047



Complete Catalog mailed on request.

MODERN COUNTING DEVICES
Stroke and Revolution Counters
Coil Winding Counters
Electric Counters
Automatic Batch Counters
Actuating Switches

Ideal for counting objects of irregular size or shape, objects too small or too light to operate a switch, freshly painted or hot objects, fresh food, etc.

Factory-adjusted and wired for plug-in connection to lighting outlet. (Also furnished for permanent connection.) Requires no technical skill.

Includes rugged, heavy duty Wizard Electric Counter, also rugged, industrial quality Actuator and Light Source housed in cast aluminum cases with adjustable mounting brackets.

Ask your PIC representative or send for literature.

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

If you write maker identify as IEN - 4048

with "clear line" inside communication

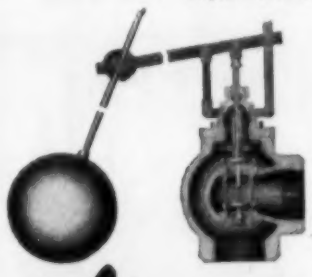
AMPLICALL equips your business with a pressure-easing internal communication system. Its "clear line" facilities provide *2-second speech contact* within and between departments. AMPLICALL frees your busy switchboard for important outside calls—keeps personnel *on the job*—keeps talk terse—saves "waiting and walking" time. Today, more than ever, your business needs pressure-easing, time-saving AMPLICALL. There is a system to fit your special needs. Get the full facts today!

SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

ELECTRONIC **AMPLICALL** INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3515-K Addison St., Chicago 18, Ill.

If you write maker identify as IEN - 4049



low cost liquid level control

Klipfel FLOAT VALVES

On the majority of liquid level control applications, there's no need for fancy electric-electronic set-ups. A simple float valve, correctly engineered for the particular service, does the job just as well, at lowest cost.

Klipfel Float Valves assure dependable, trouble-free service with a minimum of maintenance.

Write today for your copy of Klipfel Bulletin 349. It gives helpful type and size selection data and complete description of the wide range of Klipfel types, styles and sizes for every service.

Klipfel VALVES, INC.
1072 LINCOLN AVENUE
HAMILTON, OHIO

If you write maker identify as IEN - 4050

INCREASE EFFICIENCY WHILE REDUCING FATIGUE*

WITH
DURABLE SPONGE RUBBER STANDING MATS

*Fatigue robs you and your business! Long hours of standing, dampness and vibration take their daily toll of efficient help!

Production line workers, machine operators, store clerks, EVERYONE works better when using Durable Standing Mats. They're safe — the beveled edges prevent tripping, the corrugated top is non-slip! Factories, institutions and stores all over the nation have PROVEN the effectiveness of DURABLE SPONGE RUBBER STANDING MATS.

Available in all sizes up to 35 x 4-feet

Write for free sample and current price list

Durable RUBBER PRODUCTS CO.
549 WEST FULTON STREET
CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 4051

Problem:

How To Seat More People

Answer:

SICO System

Industry's overcrowded cafeterias and working areas cannot seat increasing numbers of people by adding ordinary tables. The best solution to the problem is *more* space—the kind of space possible with portable SICO Tables and Bench Service. SICO units seat more people with more comfortable leg and elbow room than any other practical system—increasing comfortable seating capacity by 33% in some rooms!

Durably constructed of tubular steel, SICO units feature tough, wear-resistant tops. . . complete portability . . . simple folding and unfolding action without pinching fingers, toppling over or marring floors.

There is a SICO System unit to suit almost every industrial seating need.

For further information, call or write today to . . .

Seating Inc. 6045 Pillsbury Avenue South, Minneapolis 19, Minnesota

If you write maker identify as IEN - 4052

Evans King-Size 10-ft. Steel Tape

STANDS UP STRAIGHT for UPRIGHT MEASUREMENTS

Those long upright measurements are easy and accurate with this new EVANS King-Size 10-ft. White-Tape. The 33% wider blade (full ¾") stays straight up without bending or buckling. You get a *free* belt clip and Tenite utility case with every tape. Sliding end hook for inside or outside measuring and . . .

it's marked so you don't have to figure! no other tape is marked this Evans way.

This Edge—marked in feet and inches with foot markings at every inch

This Edge—marked in inches from 1" to 120"

Whichever way you work, in inches or feet and inches, you read *instantly* without having to stop and figure.

The EVANS King-Size White-Tape Is the Top 10-ft. Tape Value at only $2.39* *Purchase from your supplier*

another EVANS value—

THE ONLY 12-FOOT POCKET WHITE-TAPE

Standard blade ½" wide

This L-O-N-G-E-R Pocket White-Tape only $1.89*

Purchase from your supplier

Now, a pocket steel tape that measures a full 12 feet — eliminates the inconvenience and inaccuracy of adding two measurements as you do with shorter tapes. Exclusive EVANS double markings (same as King-Size above). Chrome plated case is *no bigger than cases for shorter tapes.* Self-adjusting sliding hook for 100% accurate inside or outside measurements. Each tape packed in FREE transparent Tenite utility case

**Prices slightly higher Denver West*

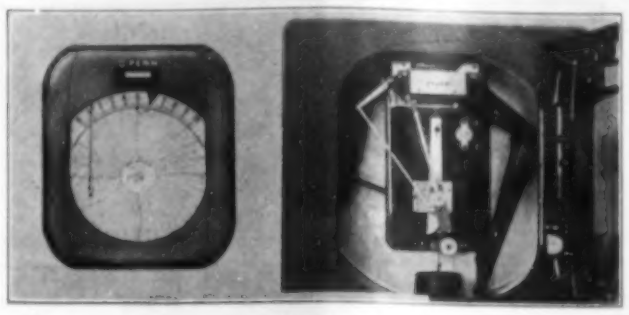
Evans & CO. 2677

400 Trumbull Street, Elizabeth, N. J., U. S. A.

If you write maker identify as IEN - 4054

RECORDING . . Flow meter, tilting U-tube for panel installation

Source: PENN INDUSTRIAL INSTRUMENT CORP. 4110 Haverford Ave., Dept. IEN, Philadelphia 4, Pa.



Catalog 1027

Illustrated is new modernized design of the original Cochrane tilting U-tube flow meter. The new unit is intended primarily for panel installation and is available in a number of indicating, recording and pneumatic transmitting assemblies for readings directly proportional to flow on evenly graduated charts.

Pressure from the up-stream side of a flow orifice, nozzle or venturi, is transmitted through one of two torsion tubes in the meter to the high pressure side of the U-tube balance. Pressure from the down-stream side is transmitted through a second torsion tube to the low pressure side. The lower ends of the two cylinders, making up the U-tube, are connected by a cross-over tube and contain a mercury seal. The U-tube is pivoted on a sealed ball bearing.

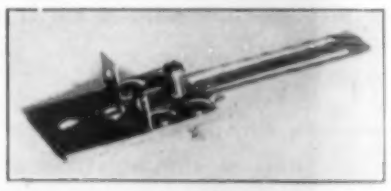
The mercury stands at the same level in both cylinders when there is no flow. Higher pressure on the up-stream side, as a result of flow, forces some of the mercury through the cross-over tube into the low pressure cylinder to increase the weight on this side of the balance and swing the tube to a new position against the restraining action of a weighted cam. The differential range can be changed by changing the calibrating weight.

Three high ranges are 169.56, 117.75 or 75.36 in. of water. The low range unit is suited for 42.39 or 28.00 inches of water. Standard output range of the available pneumatic transmitter that applies with the meter is 3 to 15 lb. per square inch. Pressure can be transmitted for distances to 1,000 feet.

If you write maker identify as IEN - 4055

RELAY . . Thermal time delay, 0.4 to 4 sec., ½ amp. on 110 volt ac.

Source: B-T MFG. COMPANY 536 North Ave., Dept. IEN, Westfield, N. J.



Patent 2,609,466

Die stamped bi-metal element is mounted on a heat resistant fibre-glass base in this new relay. The bi-metal arms and tongue provide for uniform operation unaffected by change in ambient temperature. Contacts are made of silver. Delay time is variable between 0.1 and 4 sec. by a screw adjustment. The relay measures 2¼ in. in length, 1 in. in width, ⅜ in. in thickness and weighs ½ ounce. It is packaged in bulk for industrial use at a list price of 40 cents each.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4056

3 PHASE TRANSFORMERS 3 KVA THRU 750 KVA

Next time you need 3 phase, dry type transformers in a hurry, check the performance data, practical mechanical features, as well as the price of Acme Electric dry type transformers. Stock sizes from 3 thru 750 KVA, all standard primary voltages up to and including 5 Kv. There's a Service Dealer with stock on hand — as close as your telephone.

ACME ELECTRIC CORPORATION

MAIN PLANT: 264 WATER STREET • CUBA, N. Y.

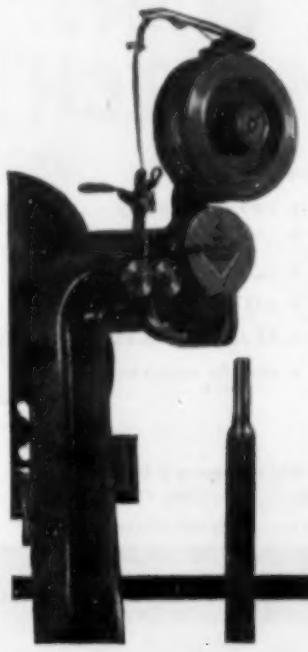
West Coast Engineering Laboratories: 1375 W. Jefferson Blvd. • Los Angeles, Cal.
In Canada: ACME ELECTRIC CORP. LTD., 50 North Line Road • Toronto, Ont.

Acme ACME Electric TRANSFORMERS

If you write maker identify as IEN - 4057

Add an Acme Steel 25-pound coil holder to your present wire stitching equipment

Stitch 2½ times longer without stopping

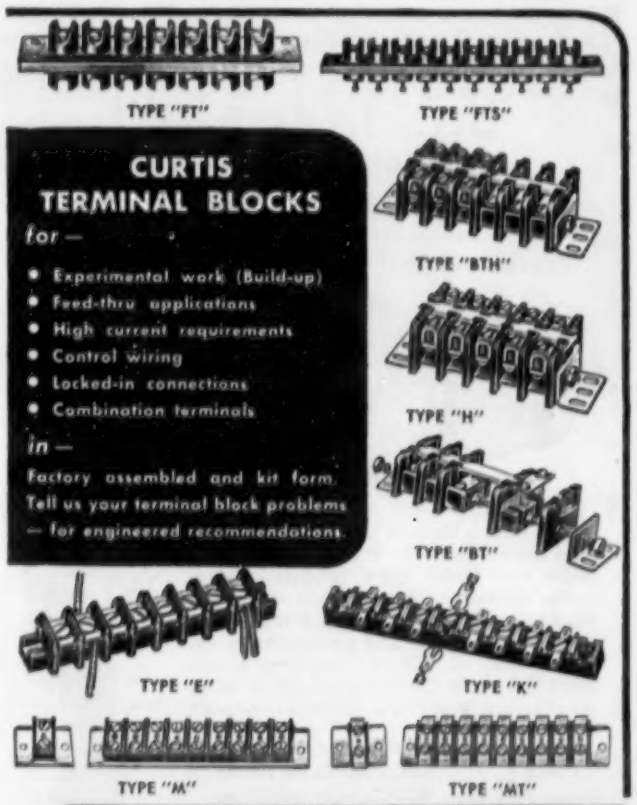


The rugged new Acme Steel 25-pound coil holder means less down time on your wire stitching operations, both because it holds 2½ times as much wire as the conventional 10-pound coil holder, and because it's easier and faster to load. Features are tangle-free wire feed and positive shoe-type brake. For details, write Acme Steel Products Division, Dept. IEN-44, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois.

STITCH IT...STRAP IT... SHIP IT...SAFELY!

ACME STEEL

If you write maker identify as IEN - 4058



CURTIS DEVELOPMENT & MFG. CO.

3214 North 33rd Street, Milwaukee 16, Wisconsin

If you write maker identify as IEN - 4059

with.... CONE-DRIVE double-enveloping Worm Gear Speed Reducers!

'Double-enveloping' — wrapping worm and gear around each other—is the secret of Cone-Drive gear's compactness.

As a result, smaller gears can be used to carry a load when you specify Cone-Drive gears —up to ½ smaller housings, too.

If space saving is a design need, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

Ask for Bulletin 8901-50

CONE-DRIVE GEARS

A Division Michigan Tool Company

DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS

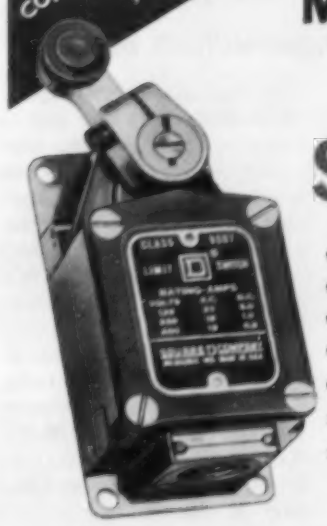
7171 E. McNichols Road • Detroit 12, Michigan

If you write maker identify as IEN - 4060

YOU GET eleven CONTACT ARRANGEMENTS IN one

with this NEW Machine Tool

LIMIT SWITCH!



- oil tight
- easy stocking
- easy mounting
- rugged mechanism
- 80 degrees overtravel
- 11 contact arrangements
- simple adjustment

Write for Bulletin SM-239. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 4061

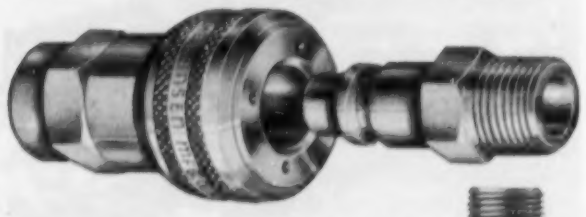
HANSEN

QUICK-CONNECTIVE

PUSH-TITE COUPLING

TRADE MARK

Provides Instant Automatic Flow or Shut-Off



To connect a Hansen Push-Tite Coupling, you merely push the Plug into the Socket with one hand. Flow is instantaneous.

To disconnect, push back sleeve on Socket . . . Coupling disconnects and flow is shut off instantly and automatically. No tools required. When Coupling is connected, Plug is free-swiveling, thus eliminating any possibility of kinks in hose.

Two-way shut-off and straight-through Couplings also available.

WRITE FOR CATALOG

THE HANSEN MANUFACTURING COMPANY

4011 WEST 150th STREET • CLEVELAND 11 - OHIO

If you write maker identify as IEN - 4062

A variety of pneumatic tools to provide effortless power for hundreds of production line and maintenance jobs.

Mall featherweight

PNEUMATIC TOOLS

Industrial plants everywhere are switching to MALL PNEUMATIC TOOLS and the results are fantastic. Production zooms overnight and costs are cut way down. Send for the free catalog that gives you all the facts showing how the many different MALL pneumatic tools will help YOU.

Model PD-103L drill weighs less than a pound yet it does a man-sized job.

40 Factory-Owned Service Warehouses, Coast to Coast, To Give You Fast, Dependable Service.

MALL TOOL COMPANY 7782 S. Chicago Avenue, Chicago 19, Illinois

Send me the MALL Pneumatic Tool Catalog.

*Name*_____ *Company*_____

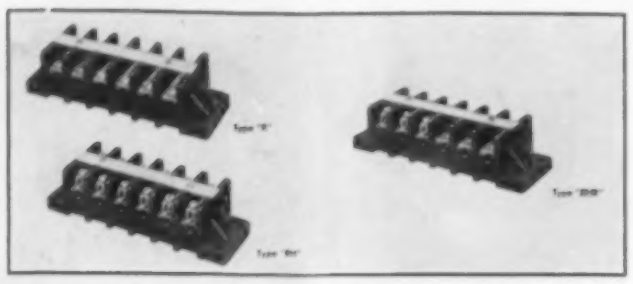
*Address*_____

MU-80

If you write maker identify as IEN - 4063

CONNECTOR . . Terminal block for circuits to 50 amp., 750 volts

Source: CURTIS DEVELOPMENT & MFG. CO.
3266 N. 33rd St., Dept. IEN, Milwaukee 16, Wis.



Corrosion proof, mechanically strong

Series R designates three new designs of high current terminal block measuring 1⅞ in. in width with terminals spaced on standard ⅝-in. centers and mounting brackets at the end. Type R is rated 35 amp. on 750 volts. It is equipped with No. 10 brass washer head terminal screws for wire to No. 10 AWG.

Type RH rates 50 amp. on 750 volts. It is fitted with high pressure solderless connectors for wire from No. 8 to No. 18 AWG. Type RHR can be specified in any combination of Types R and RH in the same block. The copper terminals are satin-nickel finish. A white marker strip is provided for circuit identification.

If you write maker identify as IEN - 4064

LADDER . . Truck stairway extends from or folds under truck body

Source: E. D. BULLARD COMPANY
275 Eighth St., Dept. IEN, San Francisco 3, Calif.

For safe footing

Tacco-Step presents two safety tread steps measuring 12 in. in width by 6 in. from front to back at the rear of a truck body. The new device assists the truck operator to carry work from the truck or to load it on. It saves the need to climb on and off the truck.

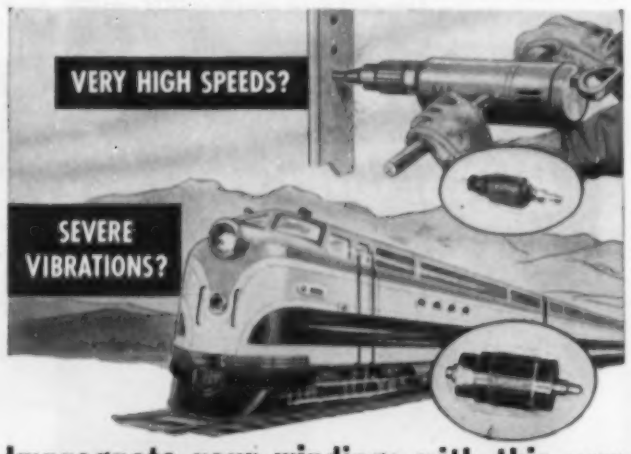
The sliding assembly bolts or welds in place beneath the body and is held in retracted position by a steel latch. When this latch is released the two steps can be pulled out and the lower one allowed to drop to its extended position. If the truck is backed against an obstruction, the assembly retracts by itself so it cannot be injured. Weight is 50 pounds. Overall dimensions are 34 by 14 by 8 in. in retracted assembly.

If you write maker identify as IEN - 4065

Quartz tube with a wall thickness of 1 in. and outside diameter to 12 in. is being cut to length with a diamond tipped wheel and a flexible shaft machine made by Stow Mfg. Co., 25 Shear St., Dept. IEN, Binghamton, N. Y. The portable machine makes it unnecessary to move the tube to any special cutting location. The diamond wheel operates at 3,450 rpm. It is used also to break down the sharp edges on the tube after the cut has been made.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4066



Impregnate your windings with this new high-strength varnish – IRVINGTON No. 140

Lab tests prove it—field studies confirm it! The exceptional bonding strength of Irvington No. 140 prevents coil movement at high speeds or under severe vibration.

In addition, it offers high resistance to heat, oil and chemicals; excellent electrical properties; unusual stability.

Get the facts on this new Irvington insulating varnish—write for technical data bulletin.

LOOK TO IRVINGTON FOR INSULATION LEADERSHIP

IRVINGTON VARNISH & INSULATOR

DIV. OF MINNESOTA MINING & MFG. CO.

31 ARGYLE TERRACE, IRVINGTON 11, N. J.

Plants: Irvington, N. J.; Monrovia, Calif.; Hamilton, Ontario, Canada

If you write maker identify as IEN - 4067

One More Thing You Have Been Asking For—

"Centre-Seal'd"

POWER RECTIFIERS

The "outside" collector serves as a seal against paint and moisture penetration to the inside or center collector. This provides clean contact between the inside collector and plate surface — a near-zero resistance even after years of operation.

Write or call for complete information.

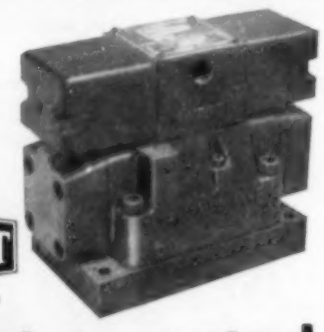
Sarkes Tarzian INC

RECTIFIER DIVISION

415 N. College Ave., Dept. B-2, Bloomington, Ind.
In Canada—50 St. Clair Ave., N. W., Toronto

If you write maker identify as IEN - 4068

RIVETT



gasket-mounted hydraulic valves

Features For Your Broader Control

1. Greater flow capacity.
2. Less pressure drop.
3. More compact in size.
4. Seven spool designs for 3 and 4-way control.
5. Dust sealed and moisture resistant. Roomy wiring box.
6. Continuous duty, shock mounted solenoids.
7. Shock resistant spool.

Series 6600 Solenoid Pilot Operated.
Series 6500 Direct Solenoid Operated.

3000 PSI — 6600 Series furnished in 1/2", 3/4", 1", 1-1/4" and 1-1/2" sizes. **6500 Series** furnished in 1/4" size.

Get new Catalog — shows why new Rivett gasket mounted solenoid pilot valves are best; illustrates flow operations for all piston designs. A must on every board!

RIVETT LATHE & GRINDER, Inc.
Dept. IEN-4, Brighton 35, Boston, Mass.

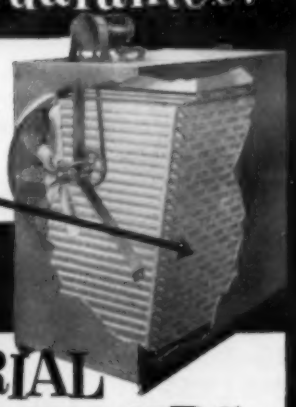
Rivett Furnishes A Complete Power Package— Air and Hydraulic Valves, Cylinders, Power Units

If you write maker identify as IEN - 4069

ONLY HALSTEAD & MITCHELL OFFERS

20-Year Guarantee!

ON THE WETTED DECK SURFACE



HM 2 thru 100 Tons

INDUSTRIAL COOLING TOWERS

Extras in Quality . . . offered only by Halstead & Mitchell . . . the famous 20-Year Guarantee on the wetted deck surface against rotting by fungus attack . . . Stainless Steel fans and shafts . . . sheet-steel cabinets, five times protected.

Write for Literature

AT LEADING WHOLESALERS EVERYWHERE

HM Halstead & Mitchell

704 BESSEMER BLDG., PITTSBURGH 22, PA.

If you write maker identify as **IEN - 4070**

You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND FLO TRUK

● An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items.

The HAULER for cases, crates, tote boxes, etc.

The HUSKY for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as **IEN - 4071**

Safety for Overhead Jobs

HI-REACH PLATFORM TELESCOPER

Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

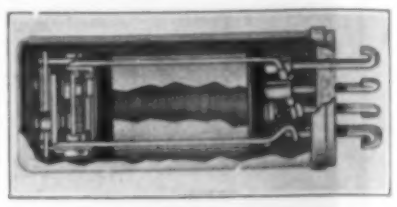
Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street, Chicago 24, Illinois

If you write maker identify as **IEN - 4073**

RELAY . . Miniature, dc. actuated, hermetically sealed, balanced armature

Source: POTTER & BRUMFIELD
264 N. Main St., Dept. IEN, Princeton, Ind.



Ruggedized Type PW

Silver contacts in this new relay are single-pole double-throw design. They rate 2 amp. on 28-volt dc. or 110-volt 60-cycle ac. Coils are available from 100 to 16,000 ohms. Operating power is 25 milliwatts to 1.5 watts. The relay measures 0.765 by 1.656 above its chassis. Weight is a little over 1 pound. The construction will withstand 10G vibration at frequencies to 500 cps.

If you write maker identify as **IEN - 4074**

TESTING . . Electronic equipment detects metal in non-metallic materials

Source: RADIO CORP. OF AMERICA
Front & Cooper Sts., Dept. IEN, Camden 2, N. J.

Protects operators and equipment

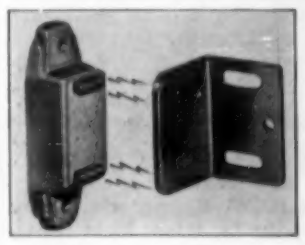
New design, particularly to detect ferrous or non-ferrous tramp metal in textiles, has been added to the electronic detector line, previously described IEN-793-52. The design employs a low wide orifice through which the textile material passes at speeds between 25 and 1,000 feet per minute. Knitting needles, card wire, joining rods are typical tramp pieces that will cause the equipment to signal or actuate a governing control. Aperture width is to specification, the equipment being available in sufficient width to inspect broadloom carpet. Normal height of the aperture is 1 inch, but other heights can be supplied.

A coil, wound inside the aperture, generates a high frequency magnetic field in the aperture. Material, moving through, will upset the field balance if any metal is present. This creates a signal in the coil circuit. It is transmitted to a control unit where it is amplified and employed to trigger a combination of controls. These controls can be set to stop a conveyor, light a warning lamp, sound a horn, spray-mark the contaminated area.

If you write maker identify as **IEN - 4075**

FASTENING . . Magnetic latch to hold a door in closed position

Source: AMERICAN CABINET HARDWARE CORP.
416 S. Main St., Dept. IEN, Rockford, Ill.



Amerock D9765

Permanent magnet, mounted in a bracket to secure to a door frame, and an angle type striker plate to mount on the door, comprise the two parts of this new magnetic door latch. The magnet is made of Alnico. It has floating action to make good contact. The unit is particularly designed for use on cabinet doors. The magnetic action will not decrease with use. List price of the new assembly is 55 cents.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4076**

Dependable
MEASURING & CHECKING EQUIPMENT

and Now
HAND WHEELS, KNOBS, HANDLES
Cadmium Plated READY TO DELIVER
Non-rusting — good looking

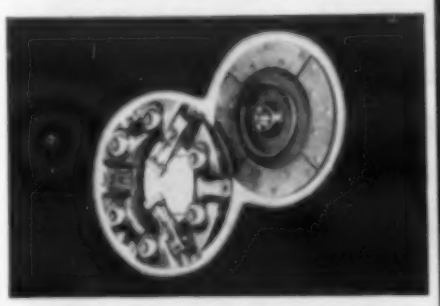
Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit 12, Mich.

If you write maker identify as **IEN - 4077**

ASSURING SMOOTH EASY OPERATION



ROCKFORD CLUTCHES are carefully adjusted and accurately balanced to prevent drag or centrifugal force from affecting their smooth running operation. An electronic gauge checks the balance of each ROCKFORD CLUTCH, within extremely close limits, before it passes final inspection.

SEND FOR THIS HANDY POWER TRANSMISSION BULLETIN
It shows typical installations of ROCKFORD CLUTCHES and POWER TAKE-OFFS. Contains diagrams of unique applications. Furnishes capacity tables, dimensions and complete specifications. Every development engineer will find help in this handy bulletin, when planning new or improved products.

ROCKFORD CLUTCH DIVISION
Borg-Warner Corporation
303 Catherine Street, Rockford, Illinois

ROCKFORD CLUTCHES

If you write maker identify as **IEN - 4078**

One of countless different applications where Rockwood Ball Valves outlast and out-perform all other makes.

Do you need a
MAINTENANCE-FREE VALVE?

Maintenance-Free in Coolant Service. Previous valves on this grinding machine were repaired or replaced at least once weekly. The present Rockwood Ball Valves, operating 500 times daily, have required no maintenance in over a year.

Other features: full *round* flow, positive leakproof seating, quick opening and closing. Tested and listed by Underwriters' Laboratories, Inc. Write for complete details. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as **IEN - 4079**

Best Buy in Hoists!

. . . and here's why!

1. Low operating cost.
2. Safe! The *only* hoist with self-locking, double worm gear which acts as its own load brake.
3. Steel from hook to hook—heavy, positive acting limit switches.
4. Dual voltage motors quickly convert from 220 to 440 volts or vice-versa.
5. Just hang it up, plug in, pull cord (one-hand control) and it goes to work.
6. Assured performance, backed by the exclusive Whiting Warranty Plan.
7. Most standard models shipped from stock.

WHITING ELECTRIC CHAIN HOISTS

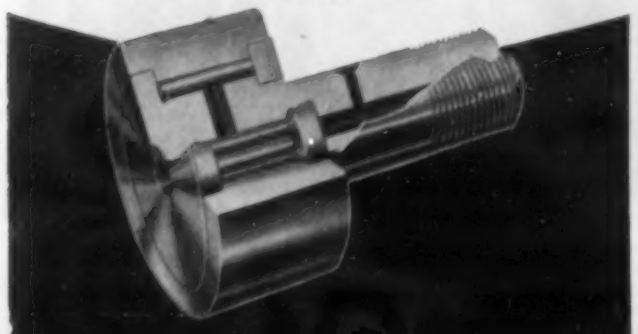
Send for Illustrated Bulletin H-112

WHITING CORPORATION
15629 Lathrop Avenue, Harvey, Ill.

If you write maker identify as IEN - 4080

Improve Performance

of cam action with MULTIROL® Cam Follower Bearings



Multirol CF Series Bearings are designed especially to insure greater precision performance in any cam actioned bearing application. They are built to provide the ultimate in radial capacity, shock resistance, space economy and longer bearing life.

Send for McGill Catalog No. 52

McGILL® precision bearings

McGILL MANUFACTURING CO., INC. 100 N. Lafayette St. Valparaiso, Indiana

If you write maker identify as IEN - 4081

With "CONTROL" ONE good towel gets a chance!

In spite of what you read and hear, high quality towels are often wasted just like cheap towels because users snatch two or three from a cabinet without giving one good towel a chance to prove that it can completely dry the hands.

But Mosinee Controlled Cabinets, which dispense just one pure sulphate Mosinee towel at a time, give the user a chance to dry his hands on the *first* towel. He seldom needs a *second*. That is why Mosinee Controlled towel services are showing from 25% to 50% cuts in towel costs. You can prove this by a trial in your own washrooms.

MOSINEE *means better towel service at less cost.*

MOSINEE Sulphate Towels

BAY WEST PAPER CO.
1114 West Mason Street
GREEN BAY • WISCONSIN
Division of Mosinee Paper Mills Co.

Send For MOSINEE SAMPLE TOWELS and data on Controlled Cabinets

If you write maker identify as IEN - 4082

Ton-Grip Made It Famous...

...VERSATILITY Made It Grow!

No. 10-W
$2.60

VISE-GRIP WRENCH

Vise-Grip's powerful toggle action makes it the speediest all-purpose wrench, pliers, clamp or hand vise you can find. As ADAPTABLE as these pictures show! 7" and 10", only $1.85 to $2.60 at your supplier.

ALSO
- VISE-GRIP C-CLAMP $2.95
- VISE-GRIP Sheet Metal Tool 2.95
- VISE-GRIP Welding Clamp 2.95

MANUFACTURED ONLY BY
PETERSEN MFG. CO., DEPT. IEN-4, DE WITT, NEB.

If you write maker identify as IEN - 4083

CONTROL . . Proximity equipment actuates counter or process sequence

Source: ELECTRO PRODUCTS LABORATORIES INC.
4501 N. Ravenswood Ave., Dept. IEN, Chicago 40, Ill.

Bulletin 4900

Model 4900 is a new electronic proximity pick-up impulse generator consisting of a transducer probe connected by a 10-ft. cable to a control assembly of power supply and electronic components. The transducer actuates the control upon the approach of a magnetic or non-magnetic metal body. Its dc. output remains constant as long as the exciting body is in close proximity. It drops to zero when the body is removed. It can be used as a portable unit or as a permanently mounted fixture. It measures 2⅝ by ¾ in., weighs 2 ounces.

The control assembly is available in a Model 4901 to provide a 4-volt dc. output. It also can be specified in Model 4091R equipped with a built-in 5-amp. 110-volt single-pole double-throw relay. This relay will operate mechanical counters at rates to 600 counts per minute. It can be used also to actuate electrical devices, to control position, limits, quantity, sequence. The equipment operates on 110-volt ac. The control housing measures 4⅝ by 2⅝ by 8 in. and weighs 4 pounds.

If you write maker identify as IEN - 4084

ROOFS . . Enameled steel is resistant to corrosive atmospheres

Source: BETTINGER CORPORATION
Dept. IEN, Waltham, Mass.

Fused porcelain

V-Corr trade names a recently improved corrugated enameled steel roofing and siding material for industrial plant construction and repair. The porcelain protects against fire and attack by corrosive gases, moisture, steam, smoke, salt air. It minimizes roofing and siding maintenance costs.

The sheet material is sold in 100-ft. squares and in steel gages from No. 18 to No. 24. Price per square installed is about $60 depending upon the gage. Holes are drilled on the job. A variety of fasteners, made of corrosion resistant materials, is available to suit any installation.

If you write maker identify as IEN - 4085

Powdered or liquid chemical is coated over any type of seed to protect it against insect attack and fungus by a new machine that has been developed at O. W. Kromer Co., 1120 Emerson Ave., Dept. IEN, Minneapolis 11, Minn. Field tests show the seed treated in the equipment will feed through a planter the same as untreated seed. The equipment will handle 17,000 lb. of seed per hour.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 4086

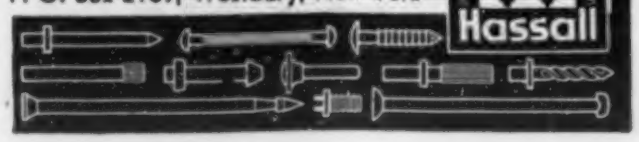
WRITE FOR FREE Hassall decimal-equivalent wall chart

In such popular demand (we've given away 50,000) — we've made it better. The new chart is far easier to read! In three colors to automatically signal decimal-equivalents of fractions. The special products which frame the chart are a constant reminder of a good source for cold-headed parts.

ESTABLISHED 1850

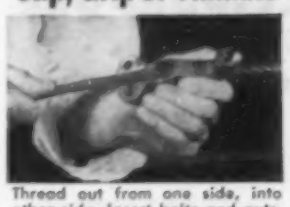
JOHN HASSALL, INC.
P. O. Box 2169, Westbury, New York

Hassall

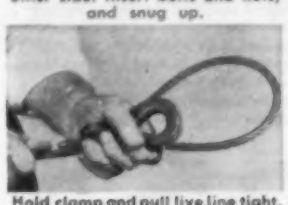


If you write maker identify as IEN - 4087

Easier to Install than Any Other Wire Rope Clip, Grip or Thimble - Newco Wire Rope Clamp



Thread out from one side, into other side. Insert bolts and nuts, and snug up.



Hold clamp and pull live line tight.

Tighten down nuts with wrench. It's ready to go!

The Newco Wire Rope Clamp always goes on right; there is no wrong side. That's why it's so easy to install. The entire assembly consists of two sections, bolts, nuts and *no clips*. No special tools required. Bolts, nuts replaced with standard hardware bolts and nuts. Once it's on, it gives maximum protection to wire rope, lasts two to three times longer than conventional clips and thimbles, reduces down time as much as 2/3. Impossible to shear bolts off. *Develops 95% to 100% of catalog list* for greater safety. Investigate now!

wire rope NEWCO CLAMP

GET ALL THE FACTS! Write today for complete information on the Newco Clamp . . . specifications, details, prices. See your distributor or write direct.

NEWMAN MANUFACTURING & SALES COMPANY
Dept. 101, 205 Westport Road, Kansas City 11, Mo.

If you write maker identify as IEN - 4088

STEEL BUILDINGS go up in a hurry when you need a new factory—machine shop—warehouse

Fully Insulated Structure

Speed of construction is a feature of our prefabricated steel building. It assembles from standardized trusses, columns, roof, side walls, insulation, windows, doors and accessory members. The completed assembly is "tailor made" to your requirements.

Single spans of 40, 48, 60 and 80 feet can be assembled in multiple. Standard sizes and 12, 16 and 20 feet in height. Standard length is any multiple of 16 feet. Windows are furnished in any 8-foot section. Hinged single doors are standard in an 8-foot section. Double hinged or overhead doors are supplied in any 16-foot section.

Folder 1 *8 pages of detail drawings, specifications and an inquiry form to request quotation*

BROOKVILLE MANUFACTURING CO.
P. O. Box 67 Brookville, Pa.

If you write maker identify as IEN - 4089

New "PULL-GEAR" SPEED-REDUCING PULLEY Increases Drill Press Capacity

NEW MODEL

Provides Correct Speed and Power to Drill up to 1⅜" with ½ H. P. Motor.

Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approximately 4 to 3000 RPM. Made in 3 motor shaft sizes: ½"—⅝"—¾". Write for literature.

Some Territories Open to Jobbers

THE PULL-GEAR CO.
25425 Mound, Rd. Center Line, Mich.

WRITE FOR LITERATURE

If you write maker identify as IEN - 4090

on panels, doors or covers where frequent opening and closing are required . . . specify

CAMLOC FASTENERS

TIGHTER
QUICKER
ECONOMICAL

VIBRATION-PROOF
In years of constant use in aircraft—where vibration is always a bugaboo—CAMLOC Fasteners have proven themselves again and again.

POSITIVE LOCKING
Spring loading plus cam action, with a cross pin that can't come out, guarantees CAMLOC Fasteners against accidental opening.

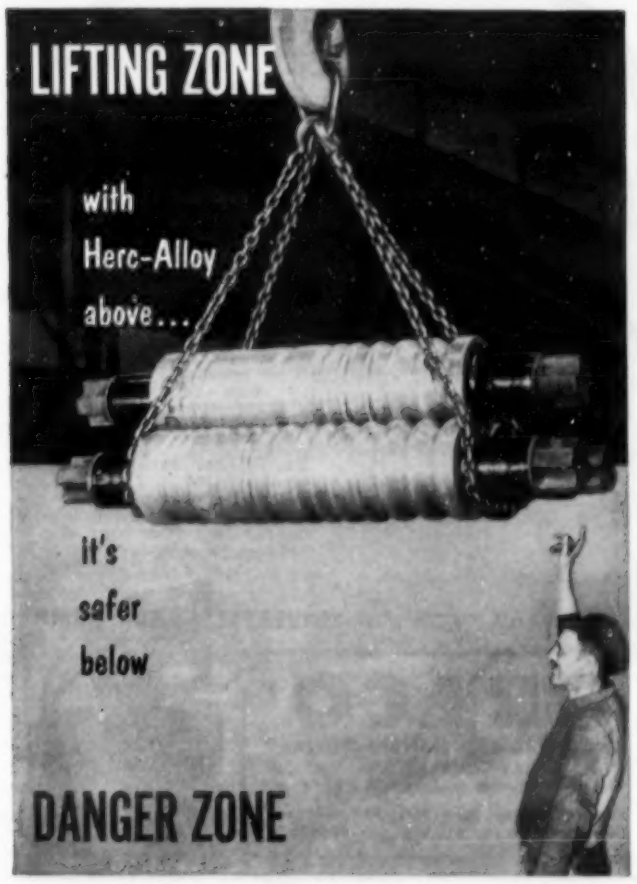
OPEN & CLOSE QUICKLY
A quarter-turn with a screw driver—or of the wing head—opens or closes the CAMLOC Fastener . . . important where quick access is vital.

SAVE MONEY 3 WAYS
CAMLOC Fasteners cost less to install . . . eliminate costly replacement because they're made to take frequent use . . . fewer do the job.

Write for our illustrated brochure containing descriptive information on the basic Camloc fastener line. Address your request to 24 Spring Valley Road, Paramus, N. J.

CAMLOC FASTENER CORPORATION
MAIN OFFICE AND FACTORY PARAMUS, N. J.
WEST COAST OFFICE 5410 WILSHIRE BOULEVARD LOS ANGELES 36, CALIF

If you write maker identify as IEN - 4091



SPECIFY
HERC-ALLOY
SLING CHAINS

The Allegheny Ludlum Steel Corp., pictured above, uses Herc-Alloy Sling Chains for hundreds of tough lifting jobs in its plants. In addition to maximum safety, Allegheny Ludlum also enjoys the extra economy of longer-lasting Herc-Alloy.

Write for Data Book

These sling chains offer still another advantage . . . a weight reduction unmatched by any other alloy chain without any sacrifice in tensile strength. This reduces worker fatigue. All things considered, don't you think Herc-Alloy Sling Chains are worth a try in your plant.

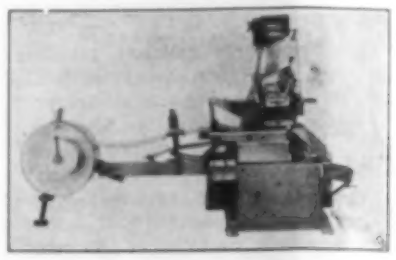
HERC-ALLOY
Sling Chains are registered by individual serial number and can be rebuilt or replaced at any time to original specifications.

COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND
In Canada: McKINNON COLUMBUS CHAIN LTD., St. Catharines, Ont.

If you write maker identify as IEN - 4093

PRINTING . . Bench type machine for labels, tags, feed roll tickets

Source: MARKEM MACHINE CO.
150 Congress St., Dept. IEN, Keene 40, N. H.



Positive feed

Model 56-A is a new printing machine for use on labels, tags and tickets so it is unnecessary to keep an inventory of these items ahead of their actual use. The machine operates at 80 to 100 impressions per minute. It will cut off and stack or rewind on a roll. Type can be changed quickly and is available in a range of sizes and styles. Special designs and trade marks can be duplicated. The inks the company supplies dry quickly and are available in a range of colors.

Drive is by a ¼-hp. motor. Maximum imprint area is 2 by 2½ inches. The machine will take rolls of labels or tickets to 2¼ in. in width by 3¾ in. in length. It occupies a bench space measuring 20 in. in depth by 23 to 40 in. in length depending on the size of the paper roll.

If you write maker identify as IEN - 4094

FLOORS . . Resurfacing material for damaged areas in concrete floors

Source: WARREN REFINING & CHEMICAL CO.
750 Prospect Ave., Dept. IEN, Cleveland 15, Ohio

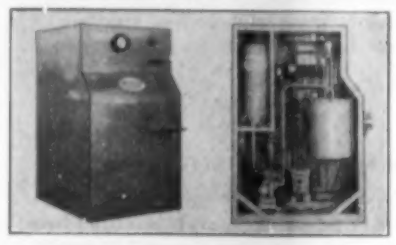
Apply, spread and tamp down

Jet Patch is a new modified asphalt and bituminous aggregate. It is packaged in 30 and 55-gal. drums to be shoveled into a damaged area and tamped down for immediate resumption of traffic. The aggregate, somewhat smaller than corn grain, can be feathered out so it does not present any shoulder between the patch and the original floor. No mixing or preliminary preparation is required. The material is not subject to washing out. It is not affected by oils and gasoline.

If you write maker identify as IEN - 4095

LUBRICATING . . Motor-driven pump delivers oil to jet engines under test

Source: J. N. FAUVER COMPANY
51 W. Hancock Ave., Dept. IEN, Detroit 1, Mich.



Built to order

Illustrated is a new assembly of Yale & Towne pump, Cuno oil filter, heat exchanger, load cell, indicators, motor and lockout button, and Parker fittings. The unit holds oil at a constant temperature and pressure and delivers it to a jet engine on test. An air operated valve controls direction of the oil flow. The pump rates 20 gpm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4096

Take the GLARE out of Micrometer Reading with the "Lustro-Chrome" MICROMETER

MEASURE TO 1/10,000 th

ALL GRADUATIONS ARE WELL-DEFINED BLACK LINES ON DULL CHROME SURFACE WHICH MEANS EASIER AND SURER READING, EVEN IN POOR LIGHT.

GUARANTEED ACCURATE WITHIN ONE HALF OF A TEN THOUSANDTH OF AN INCH.

THE CHROME SURFACE IS EXTREMELY HARD AND NON-PEELING. IT PROTECTS THE TOOL INDEFINITELY FROM RUST AND DISCOLORATION.

DROP-FORGED MODEL WITH CHROME FINISHED MICROMETER HEAD, 10th VERNIER, FROM $9.25 UP.

No. 901 C 0-1" size with LOCK NUT and RATCHET and 10th vernier as shown

$13.25

This tool with TUNGSTEN CARBIDE tipped anvils $15.75

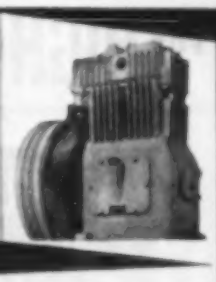
Dealers ! Here's a real profitable line

ASK FOR CATALOG ON OUR COMPLETE LINE OF MICROMETERS IN ALL SIZES.

GEO. SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200 -EN LAFAYETTE STREET • NEW YORK 12, N. Y.
SEE US AT BOOTH 516—A.S.T.E. SHOW—APRIL 26 TO 30.

If you write maker identify as IEN - 4097

NEW QUINCY COMPRESSORS WITH safe-Q-lube



For Greater Dependability . . . Lower Maintenance, Quincy Compressors are now equipped with *New* safe-Q-lube to automatically open the intake valve—unload the compressor—whenever the lubricating oil is low. When the compressor is unloaded, lack of air signals operator.

Safe-Q-lube also operates Quincy's Loadless Starting which protects motor and drive from starting overloads. And safe-Q-lube does it with 62% fewer parts for lower maintenance and replacement.

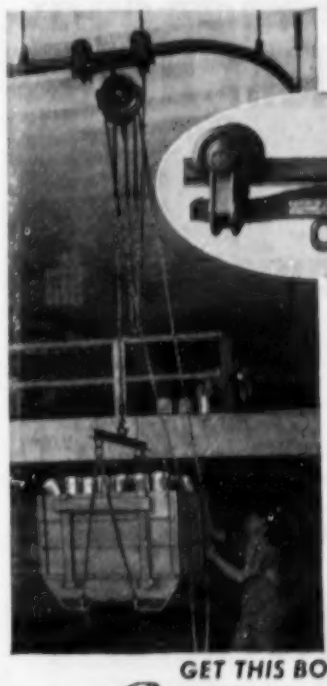
There's a Quincy Compressor for your job. Two new models—Model 255 air-cooled single-stage duplex cylinder 55 CFM piston displacement and Model 350 air-cooled two-stage 50 CFM piston displacement. Quincy has an even more complete line of 21 models in sizes from 1 to 90 CFM.

Write for new Quincy slide card illustrating safe-Q-lube. Write Quincy Compressor Co., Dept. H-35, Quincy, Illinois

Quincy COMPRESSOR
Makers of the World's Finest Air Compressors

QUINCY COMPRESSOR CO.
QUINCY, ILLINOIS
Branch Offices: New York Philadelphia • Atlanta Detroit • Chicago • St. Louis • Dallas • San Francisco

If you write maker identify as IEN - 4098



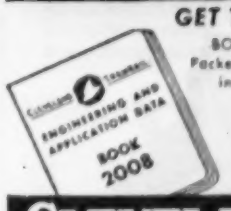
HEAVY LOADS *roll* Smooth and Easy

Starting Effort . . . 15 lbs.
Running Effort . . 10 lbs.
per ton weight

A simple, inexpensive, hand-propelled Cleveland Tramrail overhead materials handling system will pay for itself in a short time.

Overhead rails and transfer bridges make it possible to transport heavy loads directly to destination without in-between handling in a fraction of the time required for hand-handling.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information . . .



CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4242 East 285th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 4099

Reduce Tool Handling Time with KELLER BALANCERS

Simplify assembly operations by holding tools in a convenient position over the working area. Bring tools quickly to the work—increase production per man-hour. Reduce tool mistreatment—eliminate damage from dropping.

The Keller Balancer has been redesigned. It has a guide bushing that increases cable life . . . lowers maintenance. It has smoother action . . . requires less effort. Adjustable tension control accurately balances tools up to 20 pounds.

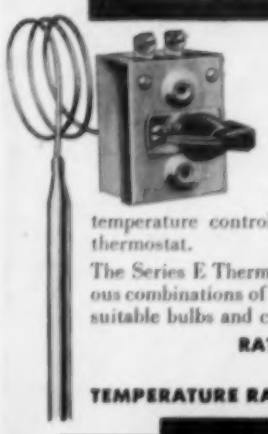
Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN-4100

FOR **HIGH** ACCURACY AT **LOW** COST

WILCOLATOR SERIES E ELECTRIC THERMOSTAT



For all remote control applications where a single pole, slow make and break thermostat may be used, you get excellent sensitivity, close temperature control with this high quality thermostat.

The Series E Thermostat is available in various combinations of temperature ranges, with suitable bulbs and capillary tube lengths.

RATING: 15 amp. 240 volts
20 amp. 120 volts

TEMPERATURE RANGE: 30°F. to 550°F.

for full information, ask for Bulletin 325

THE Wilcolator COMPANY

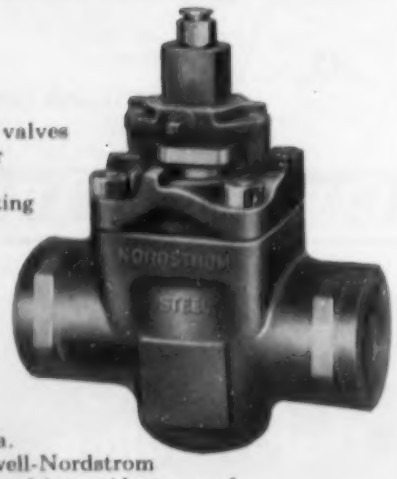
1001 NEWARK AVENUE, ELIZABETH, NEW JERSEY

If you write maker identify as IEN-4101

Does Your Plant Have Lines Carrying Corrosive Liquids?

Then You Should Know About

Rockwell-Nordstrom *Valves*



Rockwell-Nordstrom valves resist corrosion better than other valves because the vital seating area of a Rockwell-Nordstrom valve is never exposed to the line fluid. A thin film of lubricant covers the entire seating surface preventing corrosive fluids from acting upon this critical area.

In addition, Rockwell-Nordstrom valves are manufactured in a wide range of special corrosion-resistant metals.

For longer life and trouble-free valve operation, install corrosion-resistant Rockwell-Nordstrom valves at your plant.

There's a new bulletin prepared by Rockwell Manufacturing Company describing corrosion-resistant valves for industrial services. Mail the coupon below for your free copy today! Rockwell Manufacturing Company, Pittsburgh 8, Pa.

Rockwell-Nordstrom Valves

Lubricant-Sealed for Positive Shut-Off

Canadian Licensee: Peacock Brothers Limited.

ROCKWELL MANUFACTURING COMPANY 5432C
Pittsburgh 8, Pa.

Please send me Rockwell-Nordstrom Valve Catalog V-217.

Name_____ Title_____

Company_____

Street_____

City_____ Zone_____ State_____

If you write maker identify as IEN-4103

SEPARATING . . Magnetic unit cleans grinding and machining coolants

Source: DINGS MAGNETIC SEPARATOR CO.
4740 W. Electric Ave., Dept. IEN, Milwaukee 46, Wis.

Bulletin B-1513-A

Permanent magnets, mounted on a rotor inside a steel shell, in this new magnetic separator, ride around with the shell as it is driven by a small geared head motor on one side of the separator. Coolant containing metal particles and non-metallic solids flows in at the rear of the housing to come in contact with the cylinder.

Ferrous particles are attracted by the magnets and are held on the cylinder. They entrain a large portion of the non-magnetic materials and carry up and toward the front. A doctor blade, near the front, removes them from the cylinder for discharge to a suitable container.

The clean coolant flows beneath the cylinder, in counter movement with it, to emerge at either or both of two side outlets. Four separator sizes measure 16⅛ to 30⅞ in. in overall width. Height is 22 inches. Dimension, front to back, is about 27 inches. Capacities are 10 to 40 gpm.

If you write maker identify as IEN-4104

CONTROL . . Portable electronic, regulates input to electric furnace

Source: BLUE M ELECTRIC CO.
306 W. 69th St., Dept. IEN, Chicago 21, Ill.

Plugs in

Safe-Temp is a new combination electronic indicator and controller, the same as the unit employed on the company's small electric furnace previously described IEN-11117-53. The control connects into the input circuit and is actuated by a thermocouple. It provides for automatic shut-off, manual reset and indication of the furnace temperature to 1,600 deg. F. The thermocouple can be either Chromel-Alumel or Iron-Constantan.

Assembly is in a stainless steel housing. Stainless steel wall mounting brackets are supplied for remote installation. A circuit breaker switch protects against shorts and over-load so no fuses are required.

If you write maker identify as IEN-4105

Electronic computer has been teamed up with a turret punch press in an experimental installation to make the press automatic in its operations. The computer "reads" a perforated card carrying information on size, number and location of holes to be punched. The press positions the material as directed by the card and performs its punching operations. General Electric Co., Electronics Park, Dept. IEN, Syracuse 1, N. Y., told us about the job.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4106

Is your METAL PRE-PAINTING process as efficient as the Design and Engineering of your product?

N.C.Co.

METALPREP
GALVAPREP
LYFANITE
PREP-PIK-L
PREP-N-COTE

Metal Conditioning
Rust Removing
Phosphatizing
products for
STEEL, ALUMINUM,
ZINC, CADMIUM, etc.

● Proper metal preparation before painting is the foundation of your high quality finish . . . You can accomplish this end result by using a Prep Product that is designed and formulated for your requirements . . . Check with us and we will recommend a Prep Product that will give you superior results at present cost or equal performance at lower cost.

Send for Bulletin

● We have available the materials and processes for any Government Specification relating to metal treatment.

NEILSON CHEMICAL CO.
MANUFACTURERS OF METALPREP

2682 Tecumseh Road Windsor, Ontario — 6584 Benson St., Detroit 7, Mich. — 3411 Union Pacific Ave. Los Angeles 23, Calif.

If you write maker identify as IEN-4107

This torque tool leads a

DOUBLE LIFE

FIRST it's a torque screw driver

THEN it's a torque wrench!

This scientifically accurate Apco torque tool does double duty. You can use it for driving screws where tension must be measured accurately. Then, remove the bit . . . substitute a socket, and presto — it becomes a vertical torque wrench that can be used to tighten nuts up to 100 inch pounds. Available in 13 size ranges — in inch grams; inch ounces; and inch pounds.

Here's your chance to save money . . . with two tools in one! This minutely accurate torque tool is made with the same care that characterizes all Apco Mossberg Torque Tools. Send for complete facts. Apco Mossberg Company, 171 Lamb Street, Attleboro, Mass.

APCO MOSSBERG COMPANY
ATTLEBORO, MASS.

If you write maker identify as IEN-4108

New Book SHOWS YOU HOW TO HANDLE DRUM FLUIDS Faster

● If you handle fluids in drums, this little 24-page illustrated booklet can be a gold mine of ideas for you! An air-operated reciprocating pump, the amazing 13 lb. Fast-Flo operates on air as low as 35 PSI. Fits any bung opening, or can be clamped on tank sides. And *Fast-Flo does not pressurize drums!*

Fast-Flo can transfer, dispense, agitate . . . and be used as a supply pump for applying, mixing or spraying. Send for your copy of this Idea Book today!

GRACO *Fast-Flo* UNIVERSAL DRUM PUMP

GRACO
ENGINEERS AND MANUFACTURERS
GRAY COMPANY, INC.
41 Graco Square, Minneapolis 13, Minn.
Regional Offices: New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

If you write maker identify as IEN-4109

Packaged Photoelectric and Electronic Controls

AUTOTRON INDUSTRIAL PHOTO-ELECTRIC and ELECTRONIC CONTROLS

for
• Protecting Dies and equipment
• Counting • Inspecting
• Measuring • Cycling
• Processing • Sorting
• Automatic Conveyor Operation

Describes packaged units affording hundreds of combinations to meet widest range of service requirements. Send for your copy today.

NEW CATALOG

Describes general purpose photoelectric controls, "fail safe", high speed and ultra-sensitive models; photoelectric controls with electronic timers, also models with safety relays. Light sources with straight beams, wide selection of fixed pin-point beams and adjustable focus beams, also with beam intensity adjustment, dual filament lamps and safety relays. Send for your copy today.

The AUTOTRON Co.
BOX 722-C DANVILLE, ILL.
Representatives in Principal Cities

If you write maker identify as IEN - 4110

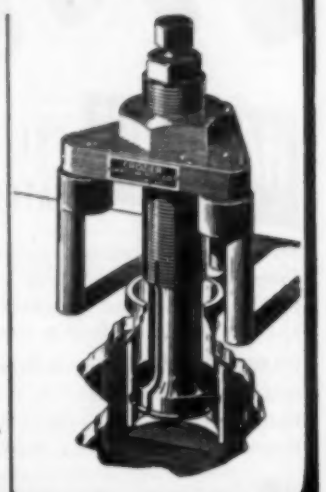
NEW EXTRACTOR

removes bushings from blind holes

...cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2"—over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.

For complete information write Department IEN-4.



CROZIER *Machine Tool Co.*

684 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

If you write maker identify as IEN - 4111

R/M's BIG 7 Packing Types meet 95% of all packing needs

Triplex pumps like this one, which is used to supply hydraulic pressure for molding presses, give top performance with R/M Vee-Flex®, a packing included in Type 7 of R/M's "Big 7" Packing Types

Let R/M packings reduce your downtime

With R/M's "Big 7" Packing Types you will be able to practice preventive rather than corrective maintenance. With them you will have greater assurance of machinery protection and a chance to schedule your downtime. You will because this basic line of just seven field-tested packing types is engineered to give custom-built performance in all but the very rarest packing applications. Your plant can probably standardize on just three or four of R/M's "Big 7" Packing Types. If so, this also means lower inventories and simplified ordering. Your R/M distributor has the full details. Call him in today.

R/M Packings for maintenance purposes are sold only through authorized R/M distributors

R/M **BIG 7 PACKINGS**

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

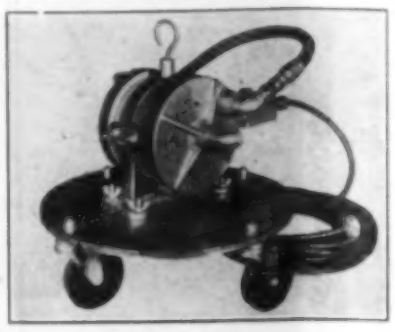
FACTORIES: Bridgeport, Conn.; Manheim, Pa.; No. Charleston, S.C.; Passaic, N.J.; Neenah, Wis.; Crawfordsville, Ind.; Peterborough, Ontario, Canada.

RAYBESTOS-MANHATTAN, INC., Packings • Asbestos Textiles • Industrial Rubber, Engineered Plastic, and Sintered Metal Products • Abrasive and Diamond Wheels Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Bowling Balls

If you write maker identify as IEN - 4113

PAINTING . . Electric heater conditions viscous fluids to spray

Source: SPEE-FLO COMPANY
720 Polk Ave., Dept. IEN, Houston 2, Texas



For protective coatings

Asphaltum and mastic materials are heated, to make them suitable for spraying, by application of this new Powermastic 600-CX portable unit in the fluid line from the supply pump to the spray gun. The heater is placed about 25 ft. back from the gun. It has capacity for about 800 gph. List price is $279.50.

Reduction in viscosity, due to heating the liquid, permits use of comparatively low air pressure at the gun. It eliminates blast, minimizes over-spray and results in a smooth uniform finish. Operation is on 110-volt ac. Mounting is on casters. An extension cord and plug are included.

If you write maker identify as IEN - 4114

SOLDERING . . Tin lead paste, cleans, tins, sweats in one operation

Source: HERCULES CHEMICAL CO.
332 Canal St., Dept. IEN, New York 13, N. Y.

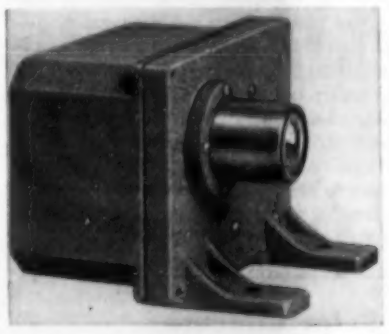
50-50 tin-lead

Swif trade names a new paste type solder containing a flux that cleans the surface to be soldered and promotes free solder flow to form a secure bond. The paste is brushed on, heated and the soldering operation is complete. Packaging is in 3-oz., ½-lb., 1-lb. and 3-lb. containers. Brushes are included in the 1-lb. and 3-lb. cans.

If you write maker identify as IEN - 4115

CONTROL . . Photoelectric unit with built in electronic time delay

Source: AUTOTRON COMPANY
Box 722-C, Dept. IEN, Danville, Ill.



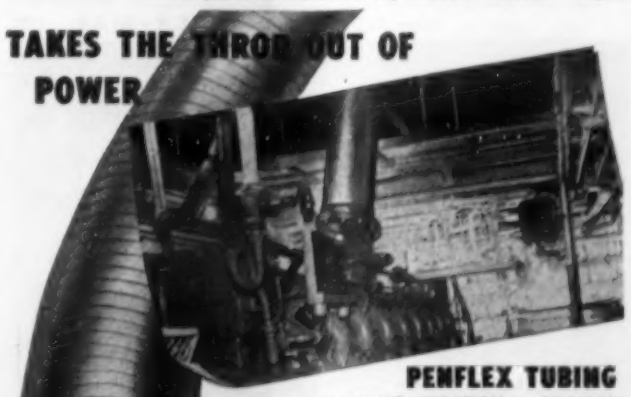
Catalog 53

Series T designates a new photoelectric control in which "on" and "off" time delay can be included to practically any desired period without interruption or restoration of the light beam. The series includes fixed and adjustable delays with "light" and "dark" time control phasing. Assembly is in a splash-proof cast aluminum housing. The company is prepared to recommend equipment suitable for each given application.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4116

TAKES THE THROB OUT OF POWER



PENFLEX TUBING

"SOAKS UP" VIBRATION . . . PROVIDES SMOOTHER COOLING OPERATION

WHEN A 16-cylinder, 1,750-hp diesel engine roars into action, the air-cooling and circulation piping really has to "take it." This particular installation performs perfectly because it is equipped with Penflex Flexible Metallic Tubing. A 5-foot length of air-jacketed 14" interlocked Penflex Tubing reaches from exhaust to stack. Its tough, rugged, "soup-proof" construction holds exhausts tight as a pipe . . . yet it is flexible enough to absorb the constant vibration.

In the power field you have many calls for Penflex—for air and gas lines, for transmission of oil, steam, and liquids. There is a complete line of steel, bronze, and aluminum Penflex Flexible Tubing, Hose and Couplings in sizes from ⅛" to 24" I.D.

Write today for new illustrated data book on "Flexineering"—the science of engineering flexible tubing to your specific job.

Pennsylvania Flexible Metallic Tubing Company, Inc.
7200 Powers Lane, Phila. 42, Pa.

PENFLEX

HEART OF INDUSTRY'S LIFE LINES

If you write maker identify as IEN - 4117

BARBER COLMAN

Wheelco Portable Potentiometer

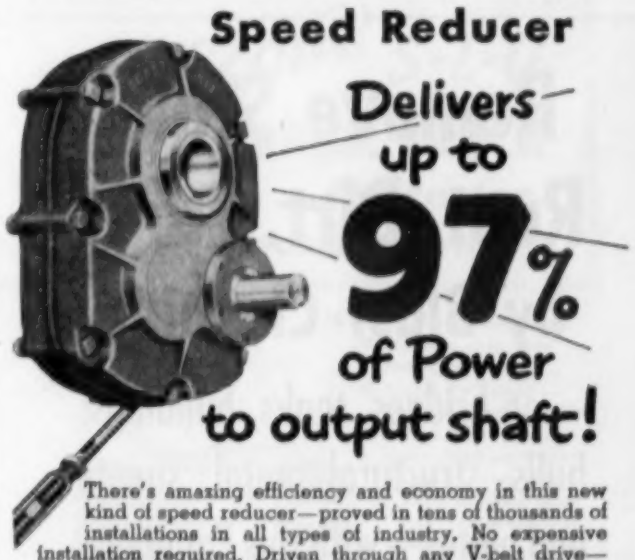
checks accuracy, calibration of temperature instruments

Simple, portable method for checking and calibrating temperature measuring and control instruments. Self-contained, with special compartment for dry cells to energize instruments during calibration checks. Easily portable. Simple to operate. Accurate to .025 millivolts. Write for Bulletin A502-4.

Factory-trained field engineers in all principal cities
WHEELCO INSTRUMENTS DIVISION • BARBER-COLMAN COMPANY
Dept. D, 1516 Rock St., Rockford, Illinois

If you write maker identify as IEN - 4118

DODGE TORQUE-ARM Speed Reducer



There's amazing efficiency and economy in this new kind of speed reducer—proved in tens of thousands of installations in all types of industry. No expensive installation required. Driven through any V-belt drive—stock Taper-Lock sheaves prescribed for desired speeds. Single and double reduction series, with capacities from 1 to 43 hp and output speeds from 12 to 330 rpm. Back stop and Tri-matic overload release available. Write for bulletin.

Dodge Manufacturing Corporation, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

If you write maker identify as IEN - 4119

CLEMENTS

Cadillac

PORTABLE ELECTRIC
COMBINATION BLOWER-SUCTION CLEANER

This versatile blower, available with attachments, can be quickly converted for handling a broad variety of maintenance tasks (suction cleaning, spraying, etc.) and for many special production jobs, such as preheating, bending, annealing, and soldering.

COSTS LITTLE TO BUY, COSTS LITTLE TO USE, SAVES A LOT!

CLEANS FASTER EASIER . . . BETTER

MADE IN 5 MODELS 1 H.P. 3 SPEEDS ILLUSTRATED

Save your equipment. Remove dirt, dust, grit, filings from every crack and crevice before they damage your machinery, decrease its efficiency. You'll reduce repairs, replacements, down-time, with this powerful cleaning tool.

Ask your mill supply dealer for a demonstration, or write us for information.

"Most Useful Tool in the Plant"

CLEANS MACHINERY • MOTORS • TOOL ROOMS • STOCK BINS

CLEMENTS MFG. CO., 6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

If you write maker identify as IEN - 4120

NEW PRESS BRAKE
IN TWO SIZES
6 FT. and 8 FT.
•
LOW PRICED
•
BIG PRESS FEATURES

- Buttress Threads in revolving bronze nut with release grooves to prevent jamming.
- One Piece Construction (welded, normalized, machined in one piece).
- Ball and Roller Bearings throughout.
- Fine adjustment.

Made by the makers of famous SEMCO "34 YEAR" BRAKE DIES.

Write for NEW color folder and prices of PRESS BRAKES and 26 standard BRAKE DIE designs. Send die specifications for estimate.

SEMCO
SERVICE MACHINE CO., INC.
200 Miller Street • Elizabeth 4, N. J.

If you write maker identify as IEN - 4121

Remove Scale, Rust, Dirt, Paint by Blast Cleaning

— on bridges, tanks, buildings, hulls, structural metal, sheets and plates—with this Pangborn Blast Cleaning Machine.

Six types, stationary or portable, deliver efficient, low-cost maintenance in any plant. $188 and up.

For details, write: PANGBORN CORP.
2300 Pangborn Blvd., Hagerstown, Md.

Pangborn BLAST CLEANS CHEAPER
with the right equipment for every job

Pangborn's 50th Anniversary 1904-1954

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-7

If you are looking for a definition for Thomas' Register, you could say it is a standing exposition of all the equipment, machinery, tools, parts, materials, supplies made in the United States. You can open its pages to any classification and there you will find the names, addresses, ratings of everyone who qualifies under that classification. You can inspect the "products booths" of thousands among them who have purchased advertising space to supplement their listings.

The Register is a product exposition that has no closing date. It is available all of the time, at any hour, to answer all of your source questions. Initial admission is $15, plus handling costs, a small price. There is just one limitation. The number of copies. No more can be produced until another year. We estimate all will be sold for 1954 come June.

EXPOSITION — IEN S-8

An excellent opportunity to see a great many new industrial products in actual operation is presented by the ASTE Show this month in Philadelphia. The American Society of Tool Engineers is putting on its annual Exposition and Conference from April 26 to 30 at Convention Hall. Metal working equipment, tools, instruments, materials, accessory items, total several hundred exhibitors.

Concurrent technical meetings add to the value of the exhibits to provide opportunity to engage in the discussions, to learn the latest practices and to bring up your own tool problems for solution. A good many manufacturers, realizing the importance of the technical meetings, are making plans to cover them with one group of representatives and the show with another group.

YOUR OWN NEW PRODUCTS — IEN S-9

The number of new products that have been released for editorial description in IEN, in the past three months, has broken all records for number and variety. Many new manufacturers are "getting in the act." Many established companies are bringing out additional products or are modernizing those they have previously developed. We just want to say, at this point, that your own new products, those that have application in the industrial field, will be welcomed. We stand ready to schedule descriptions covering them without obligation on your part other than to send us the data we need. If you want us to get in touch with your publicity manager just tell us the subject and we will get busy at once.

Best U. S. Investment:
United States Savings Bonds

Americans now hold $36 billion in Savings Bonds. Sales last year of E and H Bonds provided cash for all E and H maturities and redemptions and left $200 million net to reduce the bank-held debt.

If you write maker identify as IEN - 4123

SHIMS

nearly always come from

SHIM HEADQUARTERS SINCE 1913

LAMINATED SHIM COMPANY, INC.

SEND FOR LITERATURE

UNION STREET • GLENBROOK CONNECTICUT

If you write maker identify as IEN - 4124

HARDINGE ELMIRA, N.Y. COLLETS for LATHES and MILLERS

Precision work requires precision collets. HARDINGE Draw-in Collets assure you of all-essential accuracy plus durability and economy . . . performance that has established leadership since 1890.

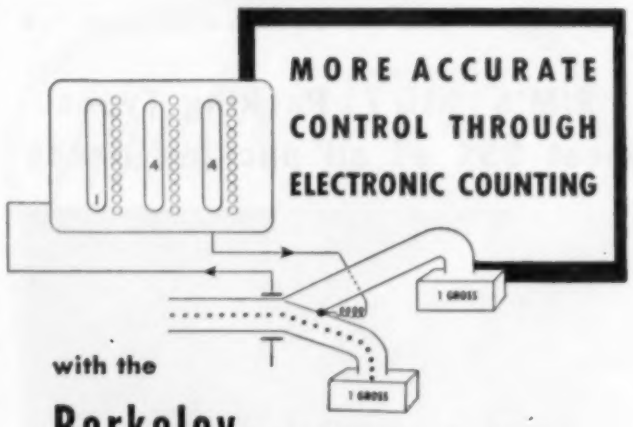
HARDINGE Collets symbolize accuracy, long life, and low cost because they are hardened and ground both internally and externally, have heat treated threads — and cost no more than ordinary collets.

HARDINGE COLLETS
For All Lathes and Automatics
Backed by 60 Years of Manufacturing Experience

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

If you write maker identify as IEN - 4125

MORE ACCURATE CONTROL THROUGH ELECTRONIC COUNTING



with the

Berkeley Preset Counter-Controller

FOR PRECISE CONTROL OF—
- Quantity packaged
- Cutting to length
- Stacking operations
- Sorting
- R.P.M.
- Flow

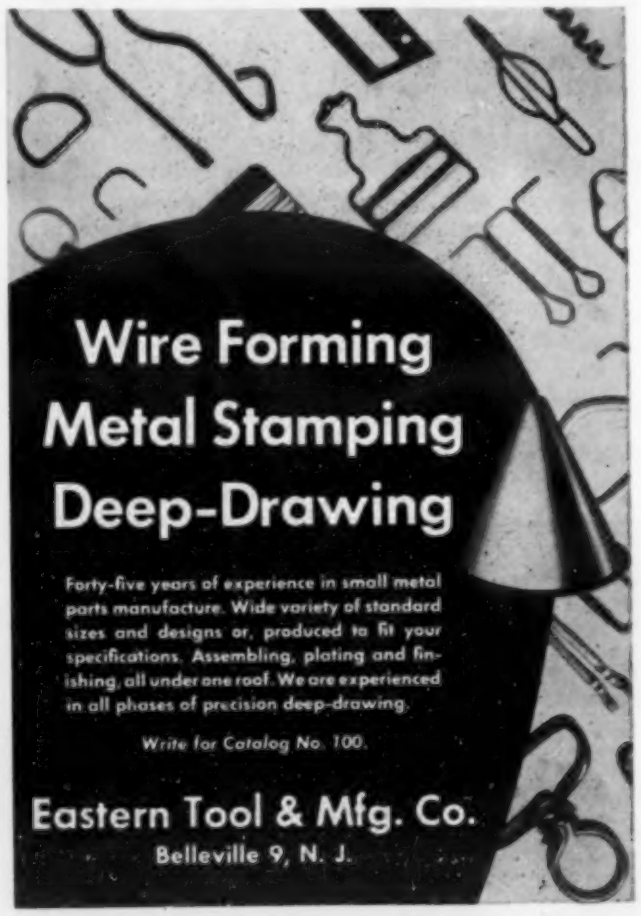
FEATURES—
- Controller uses high speed electronic counter
- Simple pushbutton control; digital indication
- Absolute accuracy of pre-selected number
- Single or dual control
- Designed for production use

Complete application data on request; write for details.

M-27

Berkeley *division* BECKMAN INSTRUMENTS INC.
Dept. Q4, 2200 Wright Avenue, Richmond, California

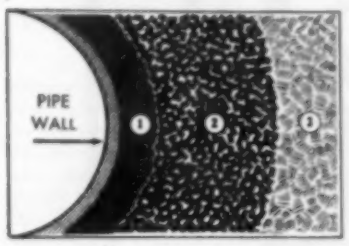
If you write maker identify as IEN - 4126



If you write maker identify as IEN - 4127

GILSULATE®

the revolutionary new Triple-Zone insulation for hot underground pipes. Lowest cost per installed linear foot.



Zone 1: First line of defense against heat loss, corrosion, moisture: a dense semi-plastic core fused on by pipe's own heat.
Zone 2: Second line of defense against heat loss and water: a sintered zone of Gilsulate particles.
Zone 3: A zone of unfused Gilsulate providing final margin of thermal insulation with high load-carrying capacity.

Gilsulate granules fuse into lifetime protection on hot underground pipes; keep them insulated, water-proof, corrosion-proof, root-proof, acid/alkali-proof.

Gilsulate is easy to use:
1. Pour Gilsulate granules out of bag onto pipe.
2. Tamp down and backfill: *the job is insulated!*

Gilsulate has been tested in scores of the country's largest and most important installations. It needs no sleeves or mechanical sheaths. It requires no mixing or special handling. It can't be punctured, doesn't require removal of rocks from backfill. It can't tear or puncture pipe since it contracts and expands with the pipe.

Write for descriptive literature

AMERICAN GILSONITE COMPANY
134 West Broadway, Salt Lake City 1, Utah
or 1145 E. Jersey St., Elizabeth 4, N. J.
Affiliate of Barber Oil Corporation and Standard Oil Company of California

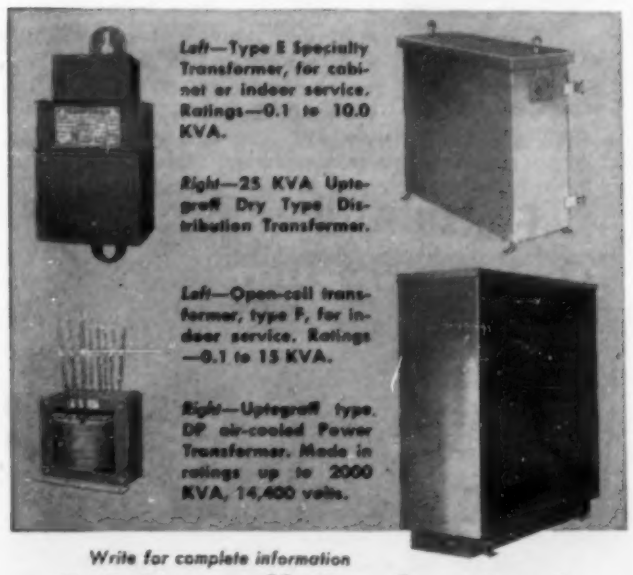
If you write maker identify as IEN - 4128

Every way

you look at them . . .

UPTEGRAFF
DRY TYPE TRANSFORMERS
LOOK GOOD!

Sizes 0.1 KVA to 2,000 KVA



Left—Type E Specialty Transformer, for cabinet or indoor service. Ratings—0.1 to 10.0 KVA.

Right—25 KVA Uptegraff Dry Type Distribution Transformer.

Left—Open-coil transformer, type F, for indoor service. Ratings —0.1 to 15 KVA.

Right—Uptegraff type DP air-cooled Power Transformer. Made in ratings up to 2000 KVA, 14,400 volts.

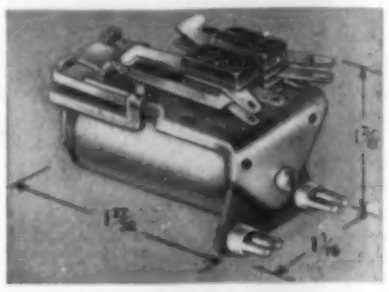
Write for complete information

R. E. Uptegraff Manufacturing Co.
Scottdale, Pennsylvania
Makers of POWER · DISTRIBUTION · INSTRUMENT · SPECIALTY TRANSFORMERS

If you write maker identify as IEN - 4130

RELAY . . Multiple contact unit in sealed, enclosed and open assembly

Source: MAGNECRAFT ELECTRIC CO.
1442-F W. Van Buren St., Dept. IEN, Chicago 7, Ill.



Precision built

Class 22 designates a new line of multiple contact relays for operation on 60-cycle ac. to 440 volts and on dc. to 230 volts. It is available with specified contact combinations employing single or twin contacts. Coil resistance ranges from 0.12 to 21,000 ohms.

The relay is particularly suited for low wattage sensitive applications and for uses where one relay must perform a large number of switching functions on minimum power input. The mechanism is resistant to shock and vibration and will withstand a wide temperature variation.

If you write maker identify as IEN - 4131

PAINTING . . Aluminum flakes in silicone vehicle for hot surfaces

Source: SPECO INCORPORATED
7308 Associate Ave., Dept. IEN, Cleveland 9, Ohio

Prices, quantities upon request

Metallic red and metallic blue are two new colors in the company's Heat-Rem line of heat resistance paints. The material will withstand temperatures to 1,700 deg. F. without flaking, blistering or burning. Application can be with a brush or spray gun. The paint will air dry in about 30 minutes.

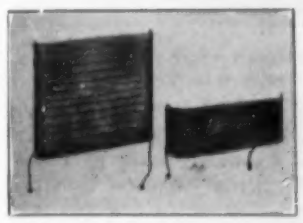
Upon heating, it fuses with the surface of the metal on which it is applied forming a protective metal coating. This coating prevents corrosion and protects against attack from mild acids, alkalis and industrial fumes. The film will expand and contract with temperature changes.

The paint is recommended for use on ovens, stoves, heaters, driers, furnaces, exhaust manifolds, mufflers, engine blocks, hot pipe lines, compressors, engine heads, radiators, boilers.

If you write maker identify as IEN - 4132

REFRIGERATING . . Condenser combines tube with expanded metal

Source: TRANTER MFG. INC.
735 E. Hazel St., Dept. IEN, Lansing 4, Mich.



Any size and shape

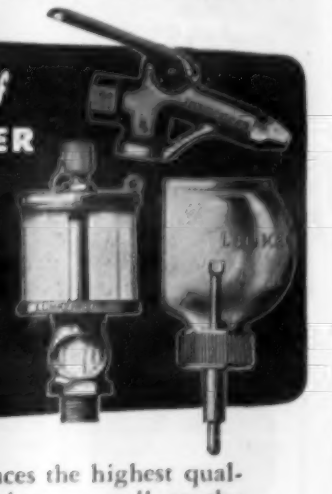
New condenser, manufactured by the company's Kold-Hold Division, dissipates heat by natural convection, occupies small space, can be installed without mounting brackets and can be formed to provide a shroud for a refrigerant compressor. Joints are assembled by brazing. Sizes and shapes are to specification.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4133

take advantage of
LUNKENHEIMER Quality

- ★ AIR DEVICES
- ★ LUBRICATORS
- ★ GREASE CUPS
- ★ OILERS

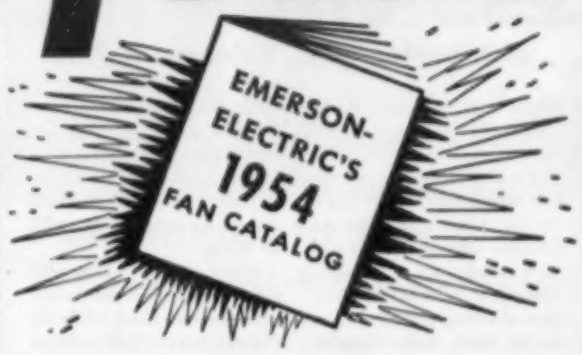


Lunkenheimer produces the highest quality Engineering Devices, as well as the world's finest Valves. Make your machinery last longer with Lunkenheimer Lubricating Devices. Cut the high cost of compressed air leaks with Lunkenheimer Air Nozzles and Cocks. The Lunkenheimer Line includes oilers, grease cups, lubricators, cocks, nozzles, liquid gauges, and whistles. Ask for literature. The Lunkenheimer Co., Cincinnati 14, Ohio.

LUNKENHEIMER®
THE ONE *Great* NAME IN VALVES

If you write maker identify as IEN - 4134

yours



Again this year Emerson-Electric offers the most complete fan line in America . . . fans for a wide variety of commercial, industrial and institutional uses. See them all in the new 1954 fan catalog. Write today for Catalog No. 763.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS · MOTORS APPLIANCES

If you write maker identify as IEN - 4135

New Bond S-L-U* DRUM TRUCK
. . . for faster, easier handling

- Spring action chime hook.
- Floating axle with rolling motion.
- Rugged all steel welded construction.
- Two wheel types: vulcanized-on rubber tread or semi-steel.
- Rests in tilted position for maximum drainage.
- Stands upright for safe storage.

The *new* Bond *Self-Loading and Unloading Drum Truck takes "the work" out of lifting, moving and draining either drums or barrels . . . and speeds the job at that! Like every hand truck in the full Bond line, this drum truck is designed and built to give extra service, extra satisfaction!

Write today for your copy of Bond Bulletin R-61 . . . it gives all the facts on the new Bond Drum Truck.

BOND FOUNDRY & MACHINE COMPANY
Manheim, Pennsylvania

If you write maker identify as IEN - 4136

CUTS COSTS AT ANY ANGLE

'Tugit' is the handiest portable tool made for lifting and pulling loads at any angle. Small size, and spur-geared hoist efficiency make close-quarter operation a cinch. The powerful, automatic brake acts quickly and smoothly—no kicking handle! Spotting is accurate—loads can be moved as little as 3/32" at a time.

In placing machines, tightening guy wires, laying pipe or thousand-and-one other jobs—'Tugit' saves time and money. It's light, compact, fits any tool box. One and two-ton sizes available. Ask your "Shaw-Box" Distributor for details or send for Bulletin 388.

'TUGIT'® HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and 'Load Lifter' Cranes. 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments, and Aircraft Products.

If you write maker identify as IEN - 4137

Performance Proves 20% to 90% LESS VIBRATION with Veelos—the Balanced V-Belt

REGULAR v-belts have spots of varying density due to their construction. Normally, these spots are not apparent, yet they throw the belt out of balance when the drive is operating. As a result, vibration is created that can damage bearings, shafts and, most important, the finished work.

This is not true of Veelos v-belts.

Veelos is absolutely uniform throughout its entire length. Every link and stud is identical. The smooth, machine-cut sides and the laminated construction assure smooth, vibrationless power delivery. Veelos is perfectly balanced.

In case after case, installation of Veelos v-belts has reduced machine vibration 20% to 90%.

Proof that Veelos will reduce vibration can easily be demonstrated with an electronic vibration analyser. This analyser measures amplitude of vibration to as low as 2-millionths of an inch.

Fifteen minutes of your time is all that is required to show you with the electronic analyser that Veelos creates less machine vibration. Drop us a line for a demonstration.

MANHEIM MANUFACTURING & BELTING COMPANY
651 Manbel Street, Manheim, Pa.

Veelos is known as Veelink outside the United States

If you write maker identify as IEN - 4138

No Miracle, Just *Sound Engineering*

Noise reduced 50%*
inside a
BURGESS-MANNING
Acousti-Booth

In the hushed interior of this roomy, airy Acousti-Booth you hear easily while telephoning. Walls of thick sound-absorbing material and patented construction reduce the loudness of noise by 50%.

Pleasing in appearance . . . simple to install.

Model 601

Model 210

Write for Bulletin A-124

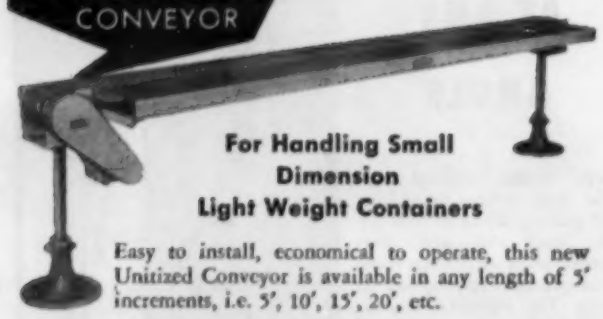
* Results of studies by a prominent research group

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 4139

NEW! NARROW BELT **UNITIZED** CONVEYOR

BELT WIDTHS OF 1" TO 6"



For Handling Small Dimension Light Weight Containers

Easy to install, economical to operate, this new Unitized Conveyor is available in any length of 5' increments, i.e. 5', 10', 15', 20', etc.

CONSTRUCTED of STANDARD PARTS

making it easy to lengthen the conveyor if increased production makes this necessary. Obsoleteness of equipment is eliminated. Ideally suited for the pharmaceutical, cosmetic, aerosol packaging, drug and chemical, plastics, food products and baking industries.

Wider widths and boosters available. Advise us of your requirements

FREE!

ISLAND EQUIPMENT CORP. **Dept. IEN-4**
27-01 Bridge Plaza North
Long Island City 1, N. Y.

Please send particulars on the Unitized Narrow Belt Conveyors.

COMPANY.....
BY.....
ADDRESS.....
CITY..... STATE.....

Visit us at Booths 116 and 118 at the Packaging Show

If you write maker identify as IEN - 4140

COMMUNICATING . . Telephone, dial design for desk or wall mounting

Source: LEICH ELECTRIC CO.
427 W. Randolph St., Dept. IEN, Chicago 6, Ill.

Bulletin, "The Leich 700"

Series 700 designates a new dial type telephone in which the hand set rests on a base in a pair of hooks designed so the base can be either desk or wall mounted. The hand set itself has been shortened to bring the transmitter closer to the user's mouth than in previous designs by the company. This change, in addition to a new design of talking circuit, provides a 5-decibel gain in transmission over the company's previous model. The dial carries its numbers and letters outside of the rotating head for visibility. A new single-coil high-impedance ringer minimizes the draw on the line current as well as noise induction on divided ringing circuits.

If you write maker identify as IEN - 4141

WELDING . . Arc electrode holder, plastic insulated, 400 amp. rating

Source: TWECO PRODUCTS CO.
Boston at Moseley, Dept. IEN, Wichita 1, Kans.

$4.50 to $7 in single units

Model A516 is new addition to the company's Twecotong line of electrode holders, previously described IEN-5989-52. Six units make up the line with ratings from 200 to 500 amperes. Each is equipped with interchangeable tip insulators, an all-position rod grip, clamp and solder cable connection, ventilated handle and current conducting metal parts made of copper alloy. The new unit weighs 27 oz. and will handle electrodes measuring 3/32 to 5/16 in. in diameter. The company has prepared an illustrated Twecolog No. 9 which is available on request.

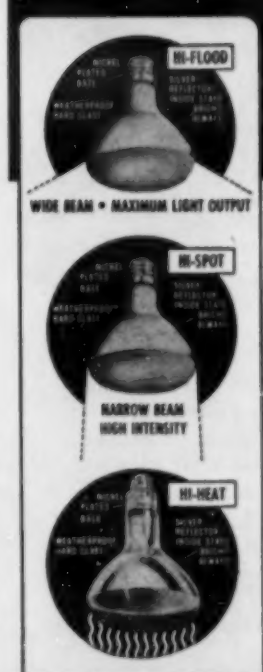
If you write maker identify as IEN - 4142

Tubular electric heating elements, manufactured by Heatube Corporation, Dept. IEN, Allegan, Mich., are employed in the dehumidifiers for compressed gases that are made by Industrol Corporation. The heating elements vaporize moisture held by the desiccant in the dehumidifier so the desiccant can be employed over again. Duplicate desiccant chambers and elements permit alternate drying for continuous operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 4143

STOP costly lamp failures *use* **RADIANT** *Reflector Weatherproof* **LAMPS**



Special glass resists

★ Sudden temperature changes
★ Moisture

Radiant R-type Industrial Lamps give more dependable, economical service indoors and outdoors. Special weatherproof glass resists cracking due to sudden temperature changes, rain, snow, and vibration. No expensive enclosed fixtures needed. Silver reflecting surface is sealed inside. Stays bright without maintenance.

Radiant Hi-Flood Lamps provide high foot-candle output for high and low bays, parking lots, and protective lighting. Available from 200 to 1000 W. Standard and high voltage.

Radiant Hi-Spot Lamps are designed for lighting indoor and outdoor areas from unusually great distances. Their narrow beam provides uniform, high-intensity light. Available in 300 and 500 W.

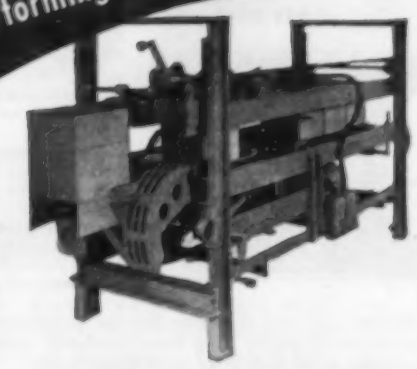
Bulletin 83 gives details and light curves. Send for it.

RADIANT LAMP CORPORATION
314 Jelliff Ave. Newark 8, N. J.

Manufacturers of Lamps from 50 to 10,000 watts for PROJECTION • SPOTLIGHT • FLOODLIGHT • INFRA-RED AERONAUTICAL • MOTION PICTURE PRODUCTION • SPORTS LIGHTING and GENERAL SERVICE

If you write maker identify as IEN - 4144

A shorter, narrower, simpler, and better performing case sealer



CAN BE MADE PORTABLE IF DESIRED

THE NEW A-B-C *Junior* CASE SEALER

The A-B-C Junior Case Sealer automatically seals corrugated shipping containers in only a fraction of the floor space ordinarily required. Operation is fast—trouble free—economical. A completely new flight chain construction virtually eliminates carton jamming . . . Three semi-automatic models are available to fit most case sizes. Write today for details and floor plans.

A-B-C PACKAGING MACHINE CORP.
QUINCY, ILLINOIS

If you write maker identify as IEN - 4145

au´to.ma´tion, *n.* Mechanized, automatic handling of materials and parts-in-process, using custom designed production and conveying equipment to match the speed of modern automatic processing machines.

EXAMPLE: Tilt Stand fabricated for American Hard Rubber Co. to handle heavy reels of rubber and aluminum strip resulted in improved production efficiency and eliminated hazardous manual handling.

If you are considering automation—check with Associated Metal Fabricators. We have shared in the design and fabrication of automation equipment for many leading companies. Our engineering assistance is yours for the asking.

NEW "Custom Fabricating for Industry" describing AMF's production and engineering skill for Special Machinery • Industrial Tanks and Ovens • Automation Production Aids. Write for your copy.

MAF 1937 ASSOCIATED METAL FABRICATORS
Division of Jacing Sheet Metal Products, Inc.
18 SEBAGO ST. • CLIFTON, N. J. • GREGORY 3-7474

If you write maker identify as IEN - 4146

BEST DEFENSE AGAINST CORROSION

Start with TYGORUST

"the no-prep vinyl primer"

- minimizes surface preparation
- brushes easily—sprays beautifully
- dries hard in 5-15 minutes
- covers up to 500-600 sq. ft./gal.
- goes under any type finish
- adheres to wet or dry rusted steel, to wood, to concrete, or to previously painted surfaces.

Finish with TYGON "Series TP" PAINT

"the vinyl finish of maximum protection"

- easily applied by brush or spray
- fast drying and non-oxiding
- fully flexible and chip-resistant
- non-flammable when dry
- easy to clean and long lasting
- resists fumes and spillage of acid, alkalies, oils, greases and water.

Write for full details—ask for Bulletin 720!

U. S. STONEWARE CO.
AKRON 9, OHIO

If you write maker identify as IEN-4147

ANOTHER BONDACTOR APPLICATION

From Concrete Repair to Sandblasting . . .

A BONDACTOR Will Do It BETTER

Concrete, refractories, other cementitious materials — BONDACTOR guns them all. Use this versatile machine for a recoating job in the morning — a waterproofing job in the afternoon. A BONDACTOR will save you time, money and manpower on countless day-in and day-out maintenance jobs. Many new construction applications, too.

THREE MODELS AVAILABLE

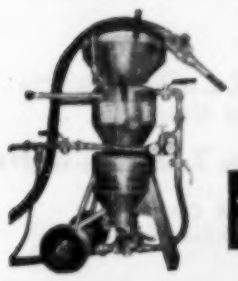
Model 750. Capacity: ½-¾ cu. yd. per hr. Operates with 75 or 105 CFM compressor.

Model 1250-S. Capacity: ¾-1½ cu. yds. per hr. Operates with 105 CFM compressor.

Model 1250-L. Capacity: 1½-3 cu. yds. per hr. Operates with 210 CFM compressor.

Capacities vary with material being gunned and with specific operating conditions.

All BONDACTORS can be operated from either plant or portable air compressors.



Write Today For Full Information
Please Indicate Intended Use

AIR PLACEMENT EQUIPMENT COMPANY
1006 W. 24th St. • Kansas City 8, Mo.

If you write maker identify as IEN-4148

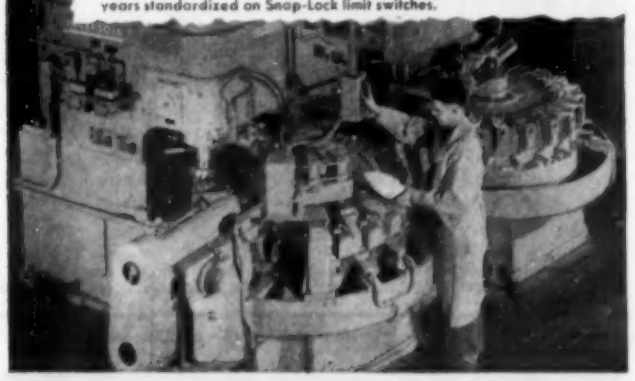
SNAP-LOCK TRADE MARK

plays vital part in new plant AUTOMATION PLANS

INGERSOLL says . . .

"For this special model, we again rely on 13 Snap-Lock switches to insure correct sequencing of all 6 operations for automatic milling of tops, bottoms and sides of sole plates for electric flat irons, at 1000 per hour — fastest rate ever attained."

The Ingersoll Milling Machine Co. at Rockford, Ill., top flight builders of precision automatic milling, boring and drilling machines, have for years standardized on Snap-Lock limit switches.



Snap-Lock is the heavy duty limit switch—quick-acting, positive, dependable—built *by* machine tool builders *for* machine tool builders.

In the 15 years since we first designed Snap-Lock to meet our own machine tool needs, it has been adopted as the standard switch equipment by 4 out of 5 of all builders of precision operated machine tools. Hundreds of users of other types of equipment also specify Snap-Locks—where control is vital, where lasting and service-free life is more important than mere price.

If you have a switch problem, choose from the wide variety of Snap-Lock standard types with regular or special mountings or, if you need a special application, let our engineers help you design Snap-Lock into your product.

Ask for Engineering Bulletin EM-51

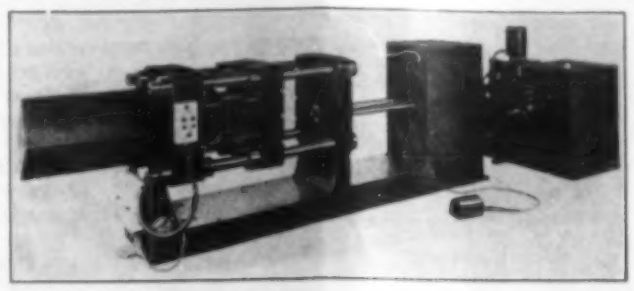
ELECTRICAL MANUFACTURING DIVISION
The NATIONAL ACME COMPANY
170 EAST 131st STREET • CLEVELAND 8, OHIO

ACME-GRIDLEY BAR and CHUCKING AUTOMATICS
1-4-6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing

If you write maker identify as IEN-4150

DIE CASTING . . Hydraulic machine for cold and hot chamber operation

Source: HARVILL MFG. CO.
Dept. IEN, Corona, Calif.



Complete specifications upon request

Aluminum, brass, magnesium can be cast with this new Model HD-303 hydraulic machine with cold chamber set-up. Lead, tin, zinc can be cast after conversion to hot chamber operation. The machine will make 300 casting cycles per hour.

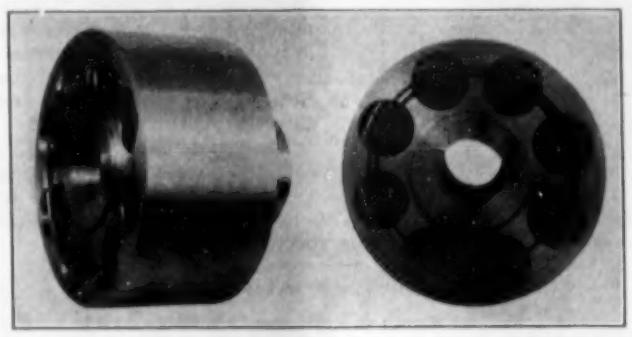
Hydraulic pressure is provided by a separate power unit equipped with a motor driven pump, accumulator, reservoir and pressure controls. This unit can be located in any convenient position and, in some cases, one unit can operate several machines. The motor is a 15-hp. unit for operation on 220-volt 3-phase ac. with push button control.

Construction includes tie bars that pull back out of the way to open the die platens on all sides. T-slots are provided in the platen faces for tool mounting. Provision is made to pull cores manually, hydraulically or mechanically in all directions. A knuckle joint assembly is employed for die clamping in which the compound toggle closes to withstand metal injection pressure of 10,000 lb. per square inch over a projected die area of 75 square inches. A safety control prevents molten metal from being injected unless the dies are closed and locked under 300 ton pressure.

If you write maker identify as IEN-4151

DRIVE . . Flexible shaft coupling with neoprene cylinder drive elements

Source: ODIN CORPORATION
P. O. Box 6032, Dept. IEN, Indianapolis 20, Ind.



For shaft diameters from ¼ to 6 inches

Solid cylinders, made of neoprene, apply in a ring of bored openings between the driving and driven members of this new Elastic Coupling. They are held in place by lock wires that apply in grooves on the two faces. They are subject to a combination of shear and compression. They isolate or dampen torsional vibration. They can be replaced quickly and inexpensively.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4152

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

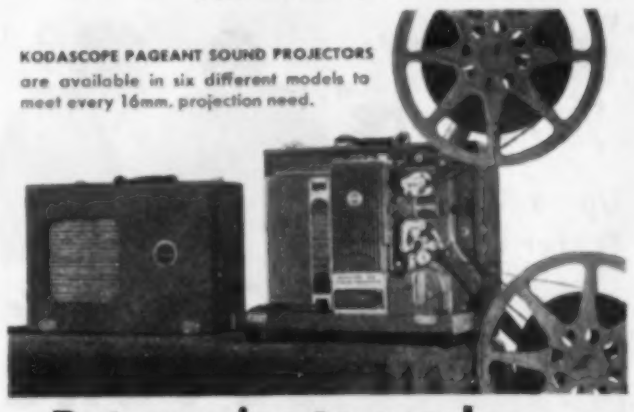
CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as IEN-4153

KODASCOPE PAGEANT SOUND PROJECTORS are available in six different models to meet every 16mm. projection need.



Put movies to work
with this trouble-free projector

Movies make almost every type of training or technical information easy to understand . . . easy to use . . . and easy to remember.

You know your movie shows will be successful when you use a Kodascope Pageant 16mm. Sound Projector. Faulty lubrication, the most common cause of projector breakdowns, is eliminated by the Pageant's permanent pre-lubrication. Only the Pageant has this important feature.

Simple, guided threading makes the Pageant unusually easy to operate. Completely portable, projector and speaker fit into a single, handy, lightweight case.

WRITE FOR FREE BOOKLET—"The Kodascope Pageant Sound Projector."

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN-4154

GENERAL PLATE
ALCUPLATE®
(COPPER ON ALUMINUM)
Cut Costs 15 to 30%

ALCUPLATE Plus Features
- High Electrical Conductivity
- Excellent Heat Dissipation
- Soft-Soldering Surfaces
- Easy Fabrication
- Light Weight

Manufacturers of various products are reducing costs by 15 to 30% or more over an equal area of copper or brass with General Plate ALCUPLATE . . . Copper clad on one or both sides of aluminum.

Here's how ALCUPLATE saves — by permanently bonding a thin layer of copper to thicker less expensive aluminum. You get solid copper performance at a lower cost over solid copper. This combination has practically the same physical and electrical properties as copper plus the light weight of aluminum.

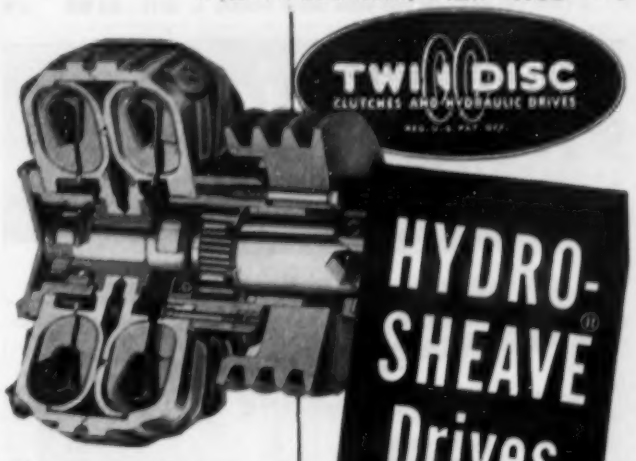
ALCUPLATE can be fabricated by stamping, drawing, spinning, and forming. Its malleability permits its use in the manufacture of many parts from work-hardened rather than annealed or dead soft materials. It is widely used for heat transfer units, electronic chassis, component case and electrical terminals.

ALCUPLATE is available in coils and flat cut lengths, copper clad on one or both sides of aluminum, 1/16" thick x 13" wide and under.

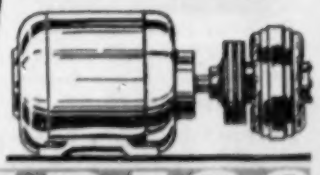
Technical Data Bulletin No. 702C gives full details. Write for a copy today.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
74 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as IEN-4155



Prevent motor burn-outs from heavy starting loads, by slipping Twin Disc HYDRO-SHEAVE Drives on the end of your motor shafts. Twin Disc Double-Circuit design fluid coupling cushions overloads; permits motor to accelerate to efficient speed and pick up loads smoothly. For motors (and engines) from ¼ to 50 hp. Write for name of nearest Authorized Hydraulic Dealer.



TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

If you write maker identify as IEN - 4156

"Any Way You Figure"

Up to 50% Faster Baking

Despatch OVENS

There's a Despatch Finish Baking Oven to meet the needs of both large factories and small shops. Wide range of uses includes aging, preheating, drying and curing. Ideal for baking insulating varnish on armatures . . . film surfaces of lacquer and enamel . . . wrinkle finishes on metal parts . . . hundreds of other baking operations. 12 to 240 cu. ft. capacities.

- Fast finish baking of mass production parts, or for repair service . . .
- Vertical and horizontal forced air circulation prevents over or under baking . . .
- Gas or electric operated . . . wide range of sizes . . . factory tested . . . shipped assembled . . ready for operation.

Write for Bulletins on RS Ovens and Trucks

Manufacturers of ovens . . . for paint finishing . . . dehydrating curing . . . all industrial and laboratory applications.

DESPATCH OVEN CO. Established in 1902

337 DESPATCH BUILDING
MINNEAPOLIS 14, MINNESOTA

If you write maker identify as IEN - 4157

BLACK "CENTR-FINDER" VISE

A Precision TOOL

designed to locate centers or other pre-determined points regardless of shape or varying sizes of parts within .001" horizontally or vertically.

Vise jaws travel on guides—actuated by opposed double-acting cylinders—synchronized by mechanical means. Force exerted is all straight line. Clamping pressures up to 2000 pounds. No pressure exerted through synchronizing mechanism. Working range 0 to 4". For centering, drilling, chamfering, hollow milling, deburring, reaming and many other production operations.

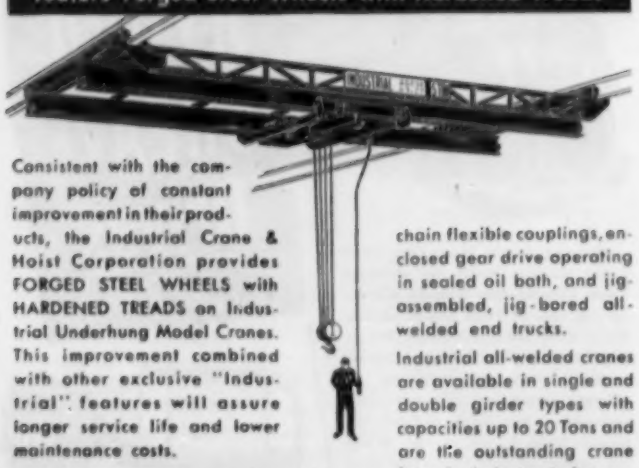
write FOR BULLETIN

BLACK DRILL CO., INC. • 1378 E. 222nd St. • Cleveland 17, Ohio

If you write maker identify as IEN - 4158

Industrial Underhung CRANES

feature Forged Steel Wheels with Hardened Treads



Consistent with the company policy of constant improvement in their products, the Industrial Crane & Hoist Corporation provides FORGED STEEL WHEELS with HARDENED TREADS on Industrial Underhung Model Cranes. This improvement combined with other exclusive "Industrial" features will assure longer service life and lower maintenance costs.

Industrial Underhung Cranes are equipped with patented "Industrial" removable head axles, heavy duty ball and roller bearings throughout, roller chain flexible couplings, enclosed gear drive operating in sealed oil bath, and jig-assembled, jig-bored all-welded end trucks.

Industrial all-welded cranes are available in single and double girder types with capacities up to 20 Tons and are the outstanding crane buys in industry today.

WRITE FOR CATALOGS

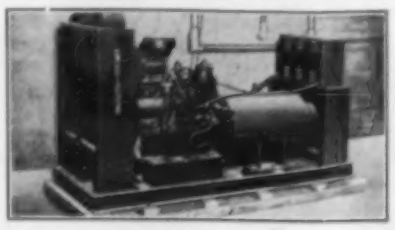
Industrial CRANES

INDUSTRIAL CRANE & HOIST CORPORATION
(formerly Industrial Equipment Co.)
221 NORTH ADA STREET CHICAGO 7, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems • Crane Runways
Representatives in Principal Cities

If you write maker identify as IEN - 4159

GENERATOR . . Engine driven for utility and stand-by, 20, 30, 50 kw.

Source: READY-POWER COMPANY
11231 Freud Ave., Dept. IEN, Detroit 14, Mich.



Bulletin 270-2

New combination of the company's ac. generator, for single or three-phase operation on 50 or 60-cycle output, at 110 or 220 volts and a Chrysler heavy-duty industrial engine for 4-cycle operation on natural gas or gasoline, is available in 20, 30 and 50 kw. ratings. The generator is rotating field design with a dynamically balanced rotor and direct connected exciter in drip proof protected construction.

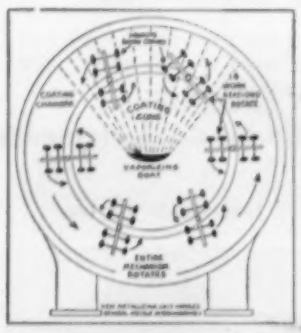
The engine employs sodium cooled exhaust valves, air cooled generator, by-pass thermostat cooling equipment, down draft carburetor, super-finished bearing surfaces. Engine and generator are coupled together and mounted on a structural steel base.

The smallest assembly measures 75 by 30 by 47 inches. The largest measures 85 by 34 by 48 inches. Weights are 1,750 to 3,150 pounds. Controls for both engine and generator are assembled in a cabinet.

If you write maker identify as IEN - 4160

PLATING . . Vacuum equipment rotates work through metallizing zone

Source: HIGH VACUUM EQUIPMENT CORP.
349 Lincoln St., Dept. IEN, Hingham, Mass.



Inexpensive to use

New design of the vacuum equipment, previously described IEN-14019-53, includes a rotating work carrying mechanism from which work pieces are suspended to carry them through a zone above a "boat" located in the center of the 66-in. work chamber. Aluminum, copper, gold, silver is evaporated by the combination of vacuum and heat from the boat to disperse upward through a 60 to 90-deg. arc.

The work is plated as it moves through this arc of evaporated metal. When silver is employed, it can be combined with lacquer and a dye to produce a "gold" effect. A 30-in. vacuum chamber also is available. Other sizes can be specified.

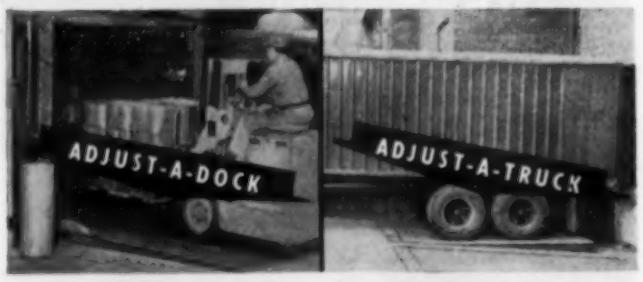
If you write maker identify as IEN - 4161

Nylon is combined with cotton to replace the conventional all-cotton breaker strip in conveyor belts manufactured by United States Rubber Co., 1230 Sixth Ave., Dept. IEN, New York 20, N. Y. Nyton trade names the new construction. It increases belt flexibility in lengthwise direction to absorb impact shock during loading operations. The new construction is particularly recommended for coal and iron ore mining operations and for steel mills, foundries, quarries.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

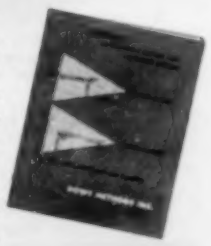
If you write maker identify as IEN - 4162

ROWE Adjustable Dock And Truck Ramps



. . . help you move more tonnage
. . . cut your dock handling costs
. . . eliminate non-productive dock tie-up of equipment and personnel
. . . reduce breakage and accidents

Whether you are planning new construction or modernizing old shipping facilities, ROWE offers a large selection of low cost dock or truck ramps that will enable you to improve the efficiency of your loading or unloading operations.



Write for a free copy of the ROWE booklet detailing equipment available.

ROWE METHODS, INC.
2534-H Detroit Avenue • Cleveland 13, Ohio

If you write maker identify as IEN - 4163

STORING . . Steel cabinet for drafting and printing supplies

Source: AKRO-MILS INCORPORATED
Box 989, Dept. IEN, Akron 9, Ohio

Model 128-32

Steel drawers measure 11½ by 5⅞ by 1 7/16 in. in this new Haz-Bin, Jr. steel cabinet. It is available in three sizes with 8, 16 or 32 drawers. The smallest unit measures 12½ by 6 by 15 inches. The largest is 25 by 6 by 30 inches. List price ranges from $14.70 to $55.80.

The cabinet is made of welded steel with baked gray hammertone enamel finish. The enclosed steel back is fitted with key holes to hang on a wall. Rubber feet are provided for application on a bench or counter. The drawers are zinc bonded, electrocoated, and equipped with safety catches so they cannot be pulled out too far and spilled accidentally.

If you write maker identify as IEN - 4164

RESISTOR . . Wire wound on glass fiber core, 7 and 10 watts

Source: INTERNATIONAL RESISTANCE CO.
401 N. Broad St., Dept. IEN, Philadelphia 8, Pa.

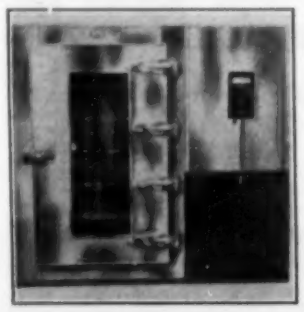
Bulletin P-2
upon request

Leads, 1½ in. in length, extend from ends of the resistance wire element in this new Type PW-7 and PW-10 resistor. The element and lead assemblies are sealed into a ceramic housing rectangular in outline. Body length measures 1⅜ and 1⅞ in. in the two sizes. Width and height are ⅜ inch. Type PW-7 is available from 0.51 to 5,100 ohms. Type PW-10 ranges from 1 to 8,200 ohms. Both are available within 5 or 10 per cent tolerance.

If you write maker identify as IEN - 4165

TESTING . . Environment chamber cycles minus 40 to plus 200 deg. F.

Source: WEBBER MFG. CO.
2740 Madison Ave., Dept. IEN, Indianapolis 3, Ind.



30 cubic feet

Interior dimensions of this new Model A-30-40 FH chamber are 36 in. in width, 24 in. in depth and 60 in. in height. Overall dimensions of the complete unit are 52 by 40 by 78 inches. Construction includes a visible type controller, patented heat exchangers, multi-paned viewing port and apertures for connections to the inner chamber. Assembly is in stainless steel with Fiberglas insulation. Two-stage refrigeration equipment provides for the low temperature. Electric heating elements are operated for high temperatures.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4166

DIAMOND DRESSING TOOLS ARE VALUABLE—INCREASE THEIR LIFE WITH

DIAMOND-MISER

Hydraulically operated, completely automatic diamond tool index.

Wheel Trueing Hydraulic Diamond-Miser operates from hydraulic system of machine; provides precise diamond indexing and hydraulic accuracy of operation. Greatly extends diamond life by eliminating common causes of diamond spoilage and waste. Available for centerless, cam, crank and universal grinders, single or multiple wheel mounts.

Send for Informative Book and Price List.

WHEEL TRUEING TOOL COMPANY
46-3200 West Davison Avenue • Detroit 38, Michigan

If you write maker identify as IEN - 4167

INSULATING . . Fiberglas molded preforms to enclose pipe fittings

Source: OWENS-CORNING FIBERGLAS CORP.
100 Nicholas Bldg., Dept. IEN, Toledo 1, Ohio

To 450 deg. F.

New preforms have been added to the company's line of Fiberglas pipe line insulation to fit American Standard cast iron, screwed elbows, tees and 45's in sizes from ½ to 8 in. as well as Standard butt welded long radius elbows and 45's from 2 to 8 inches. The screwed tee insulation can be used on gate and globe valves in the size ranges named.

The molded units will not settle, flake, chip or crack and are not damaged by moisture. They will not corrode the pipe and are suited for low or high temperature service.

If you write maker identify as IEN - 4168

HEATING . . Electric blanket to melt materials held in 5-gal. drums

Source: PRE-FAB HEATER CO.
Dept. IEN, Guilford, Conn.

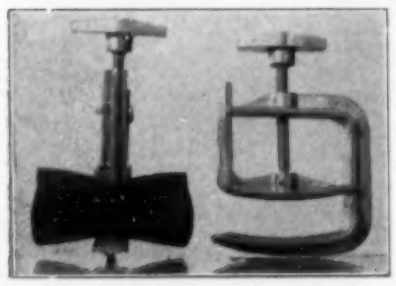
Made to order

Illustrated is a new 300-watt blanket type heating element to melt chemical plastisols held in 5-gal. drums. The resistance wire, making up the element, is insulated with glass and silicone and has a tough nylon outer braid. It plugs into a 110-volt circuit. The element wraps around the drum and is held in place with snap fasteners. A blanket of fibrous glass can be used around the heater to speed the action.

If you write maker identify as IEN - 4169

HOSE FITTING . . Screw type clamp pinches hose to shut off the flow

Source: CARL BUCK & ASSOCIATES
Box 267, Dept. IEN, Essex Fells, N. J.



Weight is negligible

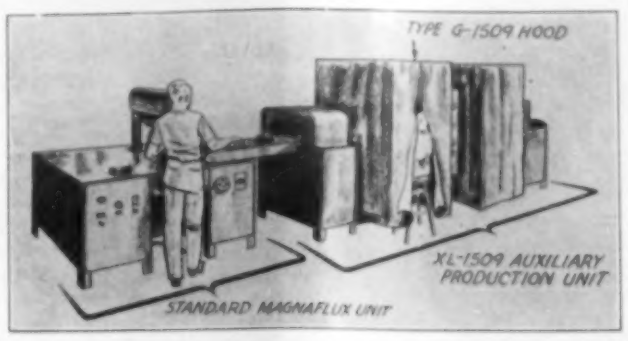
Camac Hose Valve designates this new screw operated clamp. It is made of aluminum and bronze for resistance to corrosion and is available for hose from 1 to 2½ inches. It is particularly suited for hose employed in the transfer of corrosive liquids. The curved clamping faces prevent injury to the hose structure.

All Makers of These and All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4171

TESTING . . Magnetic equipment reveals flaws in ferrous work pieces

Source: MAGNAFLUX CORPORATION
7300 W. Lawrence Ave., Dept. IEN, Chicago 31, Ill.



Specification Sheet 1662B

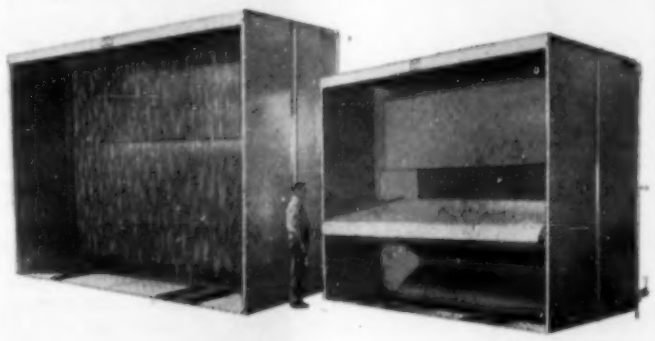
The company announces development of a new auxiliary production unit, for application with standard stationary Magnaflux equipment now in service, to provide for high volume inspection without the expense of a complete Magnaflux installation. One operator at the auxiliary unit magnetizes the work pieces and places them on the conveyor that forms a part of this unit.

The conveyor carries the work through a bath application station to the inspectors who check for defects and remove unacceptable parts. Parts that pass inspection are returned to the conveyor to be carried through a second station for further inspection or through the demagnetizing process at the end of the inspection cycle. Three designs of the auxiliary equipment are available to meet given inspection requirements.

If you write maker identify as IEN - 4172

PAINTING . . Spray booth with hinged water wall for access

Source: WESTFIELD SHEET METAL WORKS INC.
817 Monroe Ave., Dept. IEN, Kenilworth, N. J.

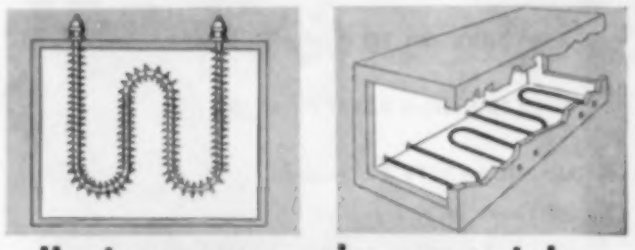


Opens to clean sludge tank

New design in the company's line of spray booths employs hinged construction in the rear water wall to provide for quick free access to the interior of the booth for inspection and cleaning. The hinged section locks in place while the booth is in operation. Grip handles assist in swinging it open. The section itself is counterbalanced. The opening arrangement does not interfere with normal use of the booth or disturb the high-velocity turbulence in the wash chambers. The company is prepared to supply the booth in sizes to meet requirements.

All Makers of These and All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4174



Heat process air accurately, uniformly with G-E Calrod* heaters

For process air heating—in curing, ripening, or drying rooms—specify long-life Calrod fin or tubular heaters to get:

Uniformity—thermostatic controls assure you of accurate temperatures.

Adaptability—heaters can be formed to almost any shape to match your job.

Cleanliness—no smoke or fumes contaminate air and endanger product quality.

For more information, see your G-E Apparatus Representative or Distributor. And write now for—

FREE APPLICATION BULLETINS

GEA-5096—"Heating Process Air with Electric Heat"
GEA-5685—"Calrod Heater Selector Guide"

Sect. 720-111, General Electric Co., Schenectady 5, New York.

*Reg. Trade-mark of General Electric Co.

GENERAL ELECTRIC

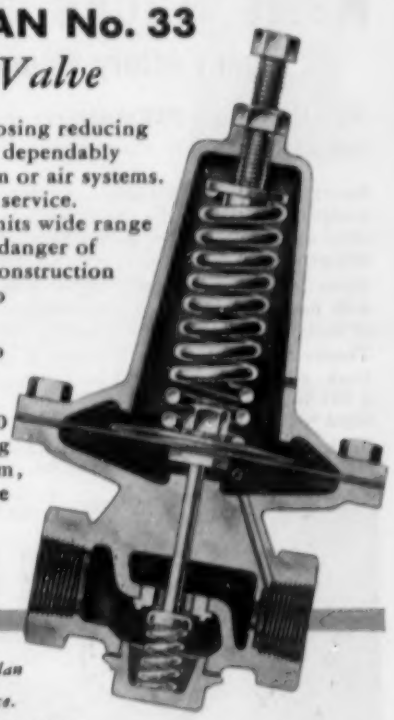
If you write maker identify as IEN - 4175

For Small Steam or Air Lines

MASONEILAN No. 33
Reducing Valve

An accurate, tight-closing reducing valve. Keeps pressures dependably constant on small steam or air systems. Easy to install, set and service. Extra-long spring permits wide range of adjustment with no danger of overstressing. Sturdy construction reduces maintenance to a minimum.

Initial pressure up to 200 lbs. reduced to any pressure from 2-20 lbs., 20-60 lbs., 60-100 lbs. Stainless Steel Plug and Seat Ring for Steam, Composition Cone-type insert for Air. Sizes ⅛" to ¾".



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REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

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Modernize your communications . . . without batteries

U. S. I. SOUND POWERED TELEPHONES

Write TODAY FOR THIS CATALOG

Write Dept. D for Catalog

If you write maker identify as IEN - 4173

Let them breathe again with VENTS of

Porous Stainless Steel or Porous Fluorocarbon Plastic or Porous Carbonyl Nickel

YOU GET —rapid pressure equalization —hi-strength —water repellancy —ease of mounting

Vent materials repel 2"—6 psi water pressure; up to 20 psi mercury pressure. State your requirements and recommendations will be made promptly without obligation.

For further information request Bulletin

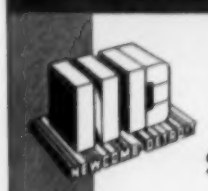
Another engineered service in PALL *porous metals and plastics by*

The Pall Filtration Companies
30 Sea Cliff Avenue Glen Cove, N. Y.
Micro Metallic Corporation · Porous Plastic Filter Co. · Aircraft Porous Media, Inc.

If you write maker identify as IEN - 4176

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



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SPRAY BOOTHS
•
PARTS WASHERS
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HEAT and AIR SYSTEMS

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TR 3-2100

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✓EXTRA HIGH SAFETY FACTOR!

✓DEPENDABILITY . . . backed by 38 Years of Know-How!

NEW T-J

Spacemaker AIR CYLINDERS

Streamlined design of the new T-J Spacemaker *eliminates tie rods . . . saves up to 40% in mounting space!* It's performance-proved . . . *super rugged* with extra high safety factor . . . solid steel heads . . . heavy wall, precision honed, *hard chrome plated,* seamless steel body . . . leakproof cylinder head to body construction . . . heavy duty, hi-tensile, *hard chrome plated* piston rod.

Available with the new T-J Super Cushion Flexible Seals which insure positive cushion with automatic valve action for fast return stroke. Many standard sizes and styles . . . for pushing, pulling, lifting, clamping or control jobs. T-J dependability. Write for bulletin 454. The Tomkins-Johnson Co., Jackson, Mich.

T-J TOMKINS-JOHNSON

If you write maker identify as IEN-4178

Super Sweeper Snaps Up Nails, Tacks and Scrap

From Factory Floors, Lots, etc.

New lightweight **PERMANENT MAGNET** *receives enthusiastic reception for maintenance help.*

Increasing problem to maintenance executives caused by dangerous tramp iron is solved by the Eriez Super Sweeper. Harmful, and often expensive, staples, nails and pieces of scrap iron are quickly snapped up by Super Sweeper's powerful ALNICO action.

Super Sweeper is light and easy to handle . . . sweeps large areas with maximum efficiency. Use it indoors or outdoors. It is a self-contained unit. No electric current. Your first cost is your last cost!

Thanks to Super Sweeper's design it can be PULLED by a jeep, truck, etc. . . . or PUSHED by a man . . . or SUSPENDED from a lift truck. The tubular steel handle can be removed. Wheels, fitted with puncture-proof 8.00" x 2" tires, are also removable.

Three strengths and four magnet widths (24", 36", 48" and 60") make certain that there is a Super Sweeper to fit your exact requirement. Write for Bulletin on this versatile trouble-saver.

ERIEZ
MANUFACTURING COMPANY
810 Magnet Drive, Erie, Pa.

ERIEZ

If you write maker identify as IEN-4179

It is difficult to predict the shape tomorrow's air power will take. But one thing is certain — fabrication of many of the component parts, such as rings, bands, and the complicated assemblies will be accomplished by welding.

If a new alloy — a special metal — an intricate assembly pose a problem to design or manufacture perhaps our specialized knowledge gained in 35 years of welding fabrication can help to find a practical and economical solution. Our Product Development Division will be glad to put experience gained from working with every major U. S. jet engine manufacturer to work for you. In addition to fusion and resistance welding of ferrous and non-ferrous metals, American Welding can provide designing, engineering, metallurgical and machining facilities. *Write us today for complete details.*

THE AMERICAN WELDING & MANUFACTURING CO.
160 DIETZ ROAD • WARREN, OHIO

If you write maker identify as IEN-4180

MARKING . . Roll type machine reciprocates marking die over work

Source: JAS. H. MATTHEWS & CO.
3948 Forbes St., Dept. IEN, Pittsburgh 13, Pa.

Fixtures to order

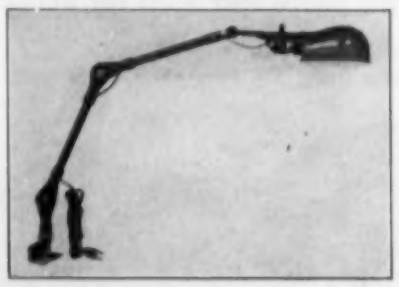
Air-Draulic No. 240 is a new roll type marking machine similar to the unit previously described IEN-3168-52. It will roll single characters, trade marks or several lines of lettering, to 3½ in. in length, into work pieces to 6 in. in diameter. It is supplied with special fixtures to hold work of various shapes and employs a combination of pneumatic hydraulic table lift to bring the unmarked work into contact with the face of the marking die.

A sliding carriage operated by a pneumatic cylinder rolls the die over the marking area when it has been brought up to marking position on the pneumatic hydraulic work table. This table can be set to control marking pressure and serves as a cushion to compensate for variations in the surface to be marked. Control centers at a foot operated valve. Air line pressure is 70 to 100 pounds. The machine occupies a floor space measuring 24 by 32 inches. It stands 52 in. in height and weighs about 900 pounds.

If you write maker identify as IEN-4181

LIGHTING . . Flexible fixture for application on a bench or machine

Source: FOSTORIA PRESSED STEEL CORP.
Dept. IEN, Fostoria, Ohio



Catalog on request

Illustrated is one of the assemblies in the company's 1954 Localite flexible fixture line. It is available with reflectors in several designs, each rotating through 360 deg., and a collet equipped base that also revolves through a complete circle. The base can be mounted horizontally or vertically and can be applied on an outlet box. The assembly includes 1, 2 or 3 arm sections and an 8-ft. extension cord and plug. The joints are a new patented tension disc design. The socket is a McGill industrial unit. It assembles with a Levolier switch.

If you write maker identify as IEN-4182

The Nazel forging hammer is offered as one unit in a "package" assembly of equipment known as the Tool Dressing Package. Complete equipment includes a furnace to heat for forging, heat treating equipment and a grinder. The furnaces are by Eclipse Fuel Engineering, the grinder by Black & Decker. Accessory tools and steels are by Bedford Tool & Forge. The package is available from Lobdell United Co., Dept. IEN, Wilmington 99, Del. Tools can be handled to 2 in. square.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4183

The All New MOBILIFT 4000 Pounder

Has *Everything* You Want in a "Sit-Down" FORK LIFT TRUCK

MODEL D-424
4,000 lbs. capacity at 24" Load Center
83" hydraulic mast lift height 108"

Check these trend-setting features . . .

- CHRYSLER 65-bhp 6 cyl. GAS ENGINE.
- CHRYSLER GYROL FLUID COUPLING.
- MOBILIFT CONSTANT-MESH TRANSMISSION with a Push-Pull Lev-R-Matic Control for forward and reverse — No Clutch Pedal — No Gears to Shift — 2 speeds forward, 2 reverse
- MOBILIFT FULL-FLOATING DRIVE AXLE.
- BALL-BEARING WORM & NUT TYPE STEERING.
- HYDRAULIC BRAKES.
- EASY TO GET ON AND OFF — NO OBSTRUCTIONS.
- FREE ACCESS FROM LEFT OR RIGHT SIDE.
- ONE-PIECE HOOD RAISES FOR EASY SERVICE ACCESSIBILITY.

Write for complete details

LAMSON MOBILIFT CORP.
835 S. E. MAIN STREET, PORTLAND 14, OREGON
2317 W. 18TH, CHICAGO • 730 PATTERSON, E. RUTHERFORD, N. J.
2724 TAYLOR STREET, DALLAS • 2730 SAN PABLO AVE., BERKELEY
1113 SPRING STREET, N.W., ATLANTA

If you write maker identify as IEN-4184

Can Bridgeport INNER-SEAL solve your sealing problem?

Industry is constantly finding new applications for INNER-SEAL, the flexible, tough gasketing material. It's used for insulating, cushioning, gasketing in the automotive, railway and refrigeration fields. It's also used for countless other purposes in manufacturing — wherever sealing problems occur.

INNER-SEAL's patented construction — spring steel molded in live sponge rubber — makes an effective, pressure-tight seal. Neoprene coated INNER-SEAL is waterproof . . . resists sub-zero and tropic temperatures, sunlight, humidity, grease, oil and abrasion. INNER-SEAL fits perfectly into corners, around curves . . . lasts for years.

INNER-SEAL is stocked in standard dimensions and colors. Heavy-duty type available in black. Special types or colors made to order.

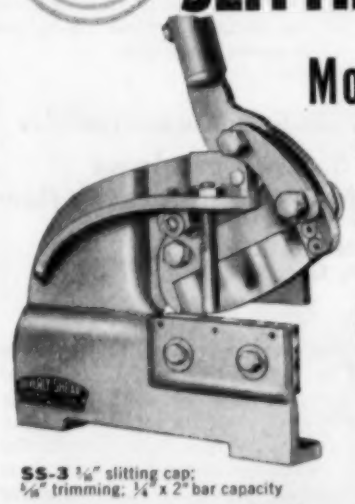
Perhaps INNER-SEAL can help you solve your sealing problem — and make *your* product better! Investigate INNER-SEAL!

Write today for **FREE SAMPLES** *and complete information.*

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

If you write maker identify as IEN-4185

NEW Beverly SLITTING SHEAR



More Power... *Easier Cutting*

Exclusive Design *Cleaner Cuts*

Ruggedly Built *last a lifetime*

Capacities to 3/16"

SS-3 3/16" slitting cap; 5/16" trimming; 1/4" x 2" bar capacity

Get faster, easier slitting and trimming with a new design Beverly "SS" Series Slitting Shear. Rigid, strongly braced frame; compounded linkage and extra strength where needed. Many exclusive features. Write for FREE illustrated Bulletin.

See your Beverly Distributor today.
Ask for a demonstration—no obligation.

Beverly SHEAR MFG. CO.
8012 WEST 111th STREET • CHICAGO 43, ILLINOIS

If you write maker identify as IEN-4186

CAN YOU REMOVE THIS BROKEN TAP FOR 18c?

A 5/8" x 13 broken high speed tap embedded in 3/4" Brown & Sharp die stock.

Remains of broken tap after being removed by the Elox M-300 Electron Drill*.

Electrode (tool) used	.290" copper tubing
Set-up Time	60 Seconds
Cutting Time	180 Seconds
Clean-up Time	60 Seconds
	300 Seconds or 5 Minutes
Electrode Cost:	$0.02
Labor Cost:	.15 (@ $1.80 per hour)
Electricity approx.	.01
TOTAL COST:	$0.18

LET US SHOW YOU HOW

elox corporation of michigan *T.M. Reg.

724 N. Rochester Road • Clawson, Michigan

If you write maker identify as IEN - 4187

NEW SUBMERSIBLE SUMP PUMP

12½" high
10" dia.
40 lbs.

MODEL 54, bronze fitted, for portable or stationary service—continuous or intermittent duty. ½ h. p. motor, G. E. components, has built-in overload protection—sealed motor and switch parts—permanently lubricated bearings. Actuated by reliable automatic heavy-duty controls—no diaphrams. Can be operated manually. Positive priming at all times. Many other features. Wide application.

Added to regular

PENBERTHY line

3 models, 7 sizes of automatic electric sump pumps by the oldest and largest producer. Equipped with automatic, trouble-free features. Known for dependability. Write for complete details.

PENBERTHY INJECTOR COMPANY
Division of the Buffalo-Eclipse Corporation
1242 Holden Avenue, Detroit 2, Michigan
Established 1886

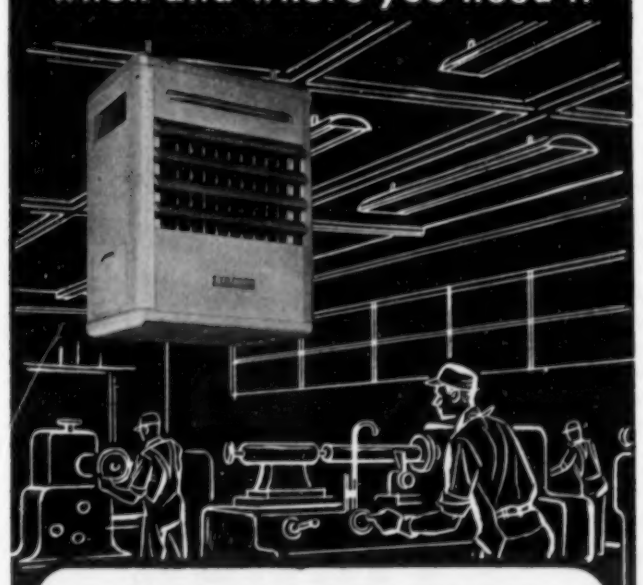
There's Certain satisfaction in **PRODUCTS BY** PENBERTHY

- EJECTORS
- EDUCTORS
- EXHAUSTERS
- SYPHONS
- JET PUMPS
- INJECTORS

If you write maker identify as IEN - 4188

Instant Heat

when and where you need it



When you heat your plant with Reznor gas-fired unit heaters, the heat you need is produced at the point of use. Each Reznor unit reacts instantaneously to the requirements of its immediate surroundings. That's the key to heating economy.

You don't have to maintain the constant stand-by firing required by a central heating system. Automatic Reznor heat is instant heat. You don't have to pour extra heat into areas which don't need it. Each Reznor heater acts independently, goes to work only when heat is really needed nearby.

There's no time lag between the moment of need and the moment of delivery. It's easy to maintain an even, comfortable temperature. And because Reznor heat is produced on the spot you save the fuel dollars wasted on heat lost in transmission.

Unit heater economy and flexibility make this method of heating the outstanding choice for new industrial construction. In older plants Reznor unit heaters offer the same advantages when used for supplemental heating. For offices and other areas where higher temperatures are needed, for outlying buildings which cannot practically be reached by a central heating system, and for trouble spots such as areas facing large doors, Reznor unit heaters are the answer.

Before you make any heating decision check the Reznor catalog in Sweet's Plant Engineering File or write to the **Reznor Manufacturing Company, 10 Union Street, Mercer, Pa.**

THE WORLD'S LARGEST-SELLING GAS UNIT HEATER

REZNOR HEATERS

If you write maker identify as IEN - 4190

PUMP . . Float controlled pneumatic alternately draws in and discharges

Source: FERRO CORPORATION
4150 E. 56th St., Dept. IEN, Cleveland 5, Ohio

Made in England

The company announces addition of a new 6-in. size and take-over of exclusive distribution for the Ejectopump, previously described IEN-5289-49. The pump is available in 1½, 2, 3, 4 and 6-in. sizes, all based on a standard housing and header, with the exception of the new 6-in. assembly. The only difference is in the non-return valves and the ejector sizes.

Types B2 and B2J are equipped with suction and discharge valves of hinged flap type to handle homogenous fluids such as china clay, chocolate, paint. Type B2SV is equipped with power-operated valves, controlled by compressed air, to handle fluids containing solid matter such as fruit stones, peas, diced vegetables.

The main housing contains a float to operate a valve enclosed in the top head. In lowered position, this valve directs air through an ejector to establish vacuum and draw in fluid through the check equipped intake. In raised position, the valve closes the intake and directs the compressed air upon the fluid that has been drawn into the housing so it is ejected through the check equipped outlet. The pump alternately draws in and ejects as the float falls and rises. Delivery is shut off before the fluid reaches the bottom of the housing so none of the air enters the outlet line.

The fluid is handled without agitation and, since no lubrication is required, there is no danger of contamination. Gritty and corrosive fluids can be handled without danger to glands or bearings since there are none. The design is self-priming and includes arrangement for blowing down. A rhythmic cycle of suction and discharge is maintained until the air pressure is shut off.

The standard pump will work against discharge head to 50 ft. and suction head to 10 ft. with compressed air supply at 30 to 50 pounds. The suction head can be increased to 20 ft. by application of a special ejector. Materials of construction can be specified to suit the fluid being handled.

If you write maker identify as IEN - 4191

TIMING . . Cam operated switch for electric pulse at preset interval

Source: HAGEN MFG. CO.
202 20th St., Dept. IEN, Moline, Ill.

Standard parts

Synchronous motor drives a cam assembly that actuates a sensitive push button switch in this new Pulse Timer. Frequency is altered by changing gears. Overall range is from one pulse every 15 sec. to one pulse per week. The wide range is obtained by the arrangement of cams which rotate at different speeds to provide accurate momentary action.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4192

WOODEN
SHELLS • ROLLS • CORES

for the
TEXTILE • RUBBER • PAPER • PLASTIC and other industries

• The CAP WELD SHELL shown above is designed for heavy duty rolling and offers the maximum in long-life service.

OPTIONAL TYPES
- CAP WELD SHELLS
- MACHINE ROLLS
- LAG ROLLS
- CAPPED END SHELLS
- CAPPED SQUARE SHELLS

These cylinders are all available in standard diameters or can be supplied on order to meet your individual specifications.

CYLINDER MFG. CO.
HAWTHORNE, N. J.
ESTABLISHED 1916

Send for descriptive Brochure

If you write maker identify as IEN - 4193

M&M
GIANT KEYSEATERS

M & M Giant Keyseaters, built in a wide range of sizes, speedily and accurately cut internal keyways or splines in the bores of pulleys, gears, fly wheels or any other machine part. Special fixtures and cutters are available for unusual shaped keyways and taper work. Send us your problems today.

MITTS & MERRILL 68
1014 SO. WATER STREET • SAGINAW, MICHIGAN

If you write maker identify as IEN - 4194

MUELLER BRASS CO.
600 SERIES
BEARING ALLOYS
FORGINGS • ROD • SCREW MACHINE PRODUCTS
proving their quality throughout American industry

Mueller Brass Co. "600" series bearing bronzes are lightweight, high strength copper-zinc base alloys with excellent bearing and mechanical properties, non-galling and non-seizing characteristics and good resistance to corrosion. There are six members of the "600" series . . . one for every purpose. Write today for complete information about the MUELLER BRASS CO. "600" series alloys for forgings, rod or screw machine products.

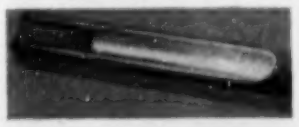
MUELLER BRASS CO. 119-A
PORT HURON 26, MICHIGAN

If you write maker identify as IEN - 4195

Do you know this about Laminates?

SHEET COMBINATIONS
Synthane can be bonded securely to rubber, metal and other materials.

TUBING COMBINATIONS
Synthane can be cured directly onto metal tubes or rods to form a tight, permanent bond.



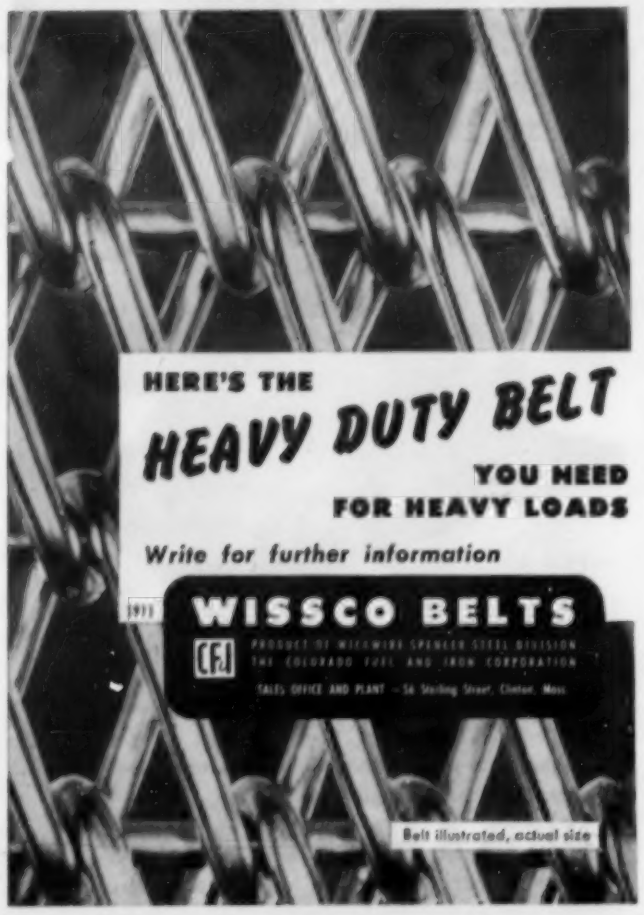
PRINTED SYNTHANE
Despite Synthane's hard, smooth surface, we can print on it to make instrument panels, dials, and other components. The process is permanent; the impressions stay put.

POST FORMING
Certain grades of Synthane may be reheated and post-formed.

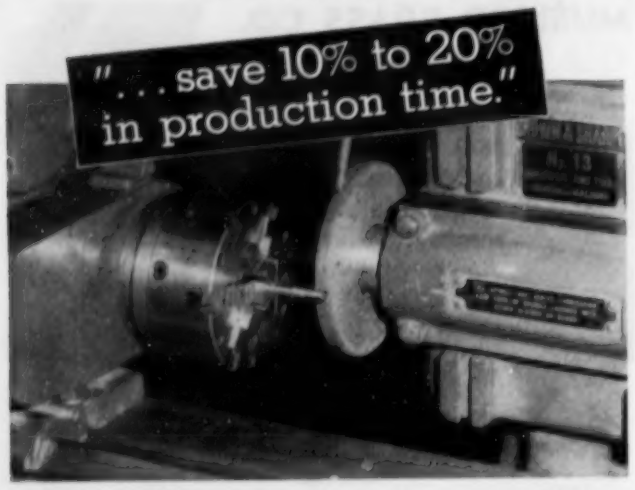
SYNTHANE
SYNTHANE CORPORATION
SOUTH RIVER ROAD, OAKS, PENNA.
Manufacturers of Laminated Plastics

Please send me a copy of the Synthane catalog.
Name _____
Address _____
City _____ (zone) _____ State _____

If you write maker identify as IEN - 4196



If you write maker identify as IEN - 4197



Buck Chucks ideal for grinders

AJUST-TRU

PAT. NO. 2,639,157

CHUCKS

Only universal scroll chuck with .0005" precision — for lathes, grinders, dividing heads, screw machines.

3-jaw and 6-jaw in 4", 5", 6", 7½", 9" sizes. 2-jaw Aviation chucks, for odd-shaped parts, in 6", 7½", 9" sizes.

ALSO SUPER-GRIP 4-JAW INDEPENDENT CHUCKS FOR 9" to 16" LATHES.

Grinding the diameter and face of a centerless carbide tipped end mill — within plus .0000", minus .0005" — on a 5" Buck chuck is shown at the Brubaker Tool Corp., Millersburg, Pa.

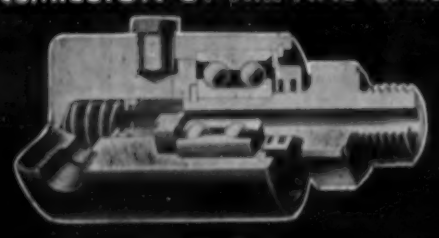
THEIR REPORT: *"The chucking of various diameters to close tolerance is expedited with the Buck Ajust-Tru chuck. By limiting the indicator truing and chucking necessary with the old line chucks, we save 10% to 20% in production time."*

You save *every* time you use a Buck — for dead true work, on duplicate parts chucking at scroll chuck speed (.0005" precision guaranteed), by eliminating costs of collets and special holding fixtures. No price premium. Send for latest catalog today.

BUCK TOOL COMPANY
414 SCHIPPERS LANE • KALAMAZOO, MICH.

If you write maker identify as IEN - 4198

FAWICK ROTORSEAL
PROVIDES TROUBLE-FREE
TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON ROAD
CLEVELAND 11, OHIO

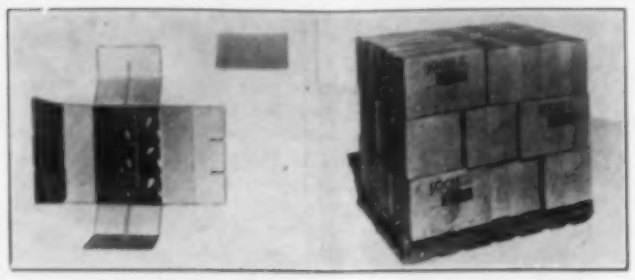
Write for ROTORSEAL Bulletin ML-6.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

If you write maker identify as IEN - 4199

PACKAGING . . Corrugated box folds quickly to take fragile product

Source: HINDE & DAUCH PAPER CO.
337 Decatur St., Dept. IEN, Sandusky, Ohio



The flaps are partitions

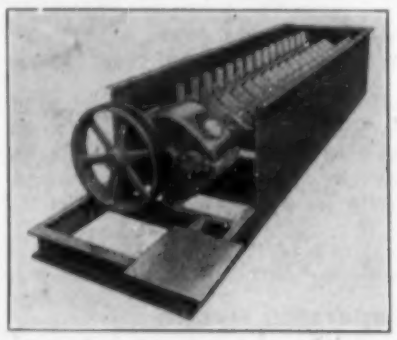
New design of shipping container employs the top and bottom flaps as cushioning partitions when the flaps are folded down in place. It requires only one rectangular insert, between upper and lower portions, to hold 12 porcelain insulators in individual cushioned compartments.

The box is rectangular in shape to lock securely when stacked on a pallet. It minimizes the number of loose pieces that must be handled in the packaging operation. The design is typical of special containers the company is prepared to supply for given applications.

If you write maker identify as IEN - 4200

MIXING . . Paddle type machine to blend liquids and fine materials

Source: McLANAHAN & STONE CORP.
Dept. IEN, Hollidaysburg, Pa.



The Hydro-Blender

Parallel shafts, 12 ft. in length, are equipped with pitched paddles that mesh at the center of the trough-like housing in this new mixing equipment. The shafts rotate in opposite directions, upward in the center. The materials are blended by upward, backward and forward movements. The materials feed in by conveyor or bucket. The mixture is discharged through a spout at the drive end.

The drive employs enclosed splash lubricated gears. The paddle shaft roller bearings, at the feed end, are lubricated by oil mist equipment operating on 30-lb. pressure. Two sizes of machine mount 6 by 6 by 144-in. paddle shafts and 8 by 8 by 144-in. shafts. Paddles bases are welded to the shaft faces. The abrasion resistant paddles are bolted in place.

If you write maker identify as IEN - 4201

Isolating vibration in industrial equipment on a cushion of Vibracork is the subject of an instruction sheet published by Korfund Co., 48-15 32nd Place, Dept. IEN, Long Island City 1, N. Y. Sketches illustrate the text. Ask for Bulletin VC-501.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4202

Send for this FREE BOOKLET

A Directory of Technical Data Available From Arcos To Help You On Your Welding Jobs

Whether your problem involves welding stainless, low alloy-high tensile, or non-ferrous metals, this handy Directory will tell you quickly the wealth of practical information available from Arcos for your use. Right at your fingertips it places a convenient recap on what Arcos offers, such as: **Application Chart and Weld Metal Analysis on 56 Different Arcos Electrodes; Stainless Electrode Selector For Welding Stainless Steels; ABC's of Welding High Tensile Steels; plus informative charts, electrode data sheets, reprinted articles on welding, technical guides, etc.**

Send for your copy today. Ask for booklet #10528. There's no obligation. And for dependable welding results at all times, WELD WITH ARCOS STAINLESS, LOW HYDROGEN and NON-FERROUS ELECTRODES.

ARCOS CORPORATION
1500 South 50th Street • Philadelphia 43, Pa.

If you write maker identify as IEN - 4203

NEW MORSE TORQUE LIMITER

eliminates shear pins

- Torque-adjustable
- Self-resetting
- Tamperproof
- Adaptable

Avoid Machine Dismantling

Eliminate inconvenience, expense and machine downtime connected with resetting shear-pin mechanisms. The Morse Torque Limiter is torque-sensitive, compact and tamperproof. Can be used with sprockets, gears or pulleys. Gives positive protection on machine drives. Automatically slips at overload setting and resets when overload condition is corrected.

Available from stock in diameters from 3" to 10"; maximum ratings from 20 through 628 ft.-lbs.

Get more details. Send today for Morse Catalogue C 12-54.

MORSE CHAIN COMPANY
7601 CENTRAL AVENUE
DETROIT 10, MICHIGAN

MORSE
MECHANICAL POWER TRANSMISSION PRODUCTS

If you write maker identify as IEN - 4204

Move Air or Fumes ECONOMICALLY with new PORTOVENT* Ducting

Available in sizes 3 in. ID to 36 in. ID

This new spiral-wire reinforced ducting has many features which can mean savings in time and money.

11 in. diameter PORTOVENT extended and compressed.

First cost is low. Portovent is easy to connect and install. It can be cut to any length on the job with no weakening or raveling, because it has fully bonded seams. Portovent has excellent lengthwise compressibility . . . is easy to transport and store . . . maintains large sections on sharp bends . . . has excellent air flow characteristics.

Portovent is made with Nylon base (Type SY) or cotton base (Type SC). Both are impregnated with age-resisting Neoprene compound.

Write today for details on this new Portovent Ducting.

*Trade-marks

THE FLEXAUST COMPANY
Dept. IE-4, 100 Park Avenue, New York 17, N. Y.
Formerly American Ventilating Hose Co.

FLEXAUST* PORTOVENT* BLOFLEX*

If you write maker identify as IEN - 4205

DRAGERT'S

CHRōMLEAD

TRADE MARK REGISTERED

90% LEAD AS METAL
Chromium Inhibitor Added

THE ALL PURPOSE THREAD COMPOUND THAT SPINS WITH THE THREADS

The perfect metal to metal seal for all type of threads.

Will not Gall — permits clean break-out without damage to threads at all times.

Prevents corrosion of threads from any cause.

Withstands extremely high pressures.

Prevents Drill Collar washouts.

Tested to 25,000# Torque on Drill Pipe Tool Joints.

Packed and Priced as Follows

1#	.90 per lb.	5#	.75 per lb.
10#	.65 per lb.	45#	.60 per lb.

F.O.B. DALLAS, TEXAS

C. H. DRAGERT CO.
INCORPORATED
EAGLE FORD STATION DALLAS, TEXAS

If you write maker identify as IEN - 4206

NOW! CUT YOUR CURRENT COSTS... BOOST LAMP LIFE, WITH

LUSTRA GOLD-TONE FLUORESCENT STARTERS

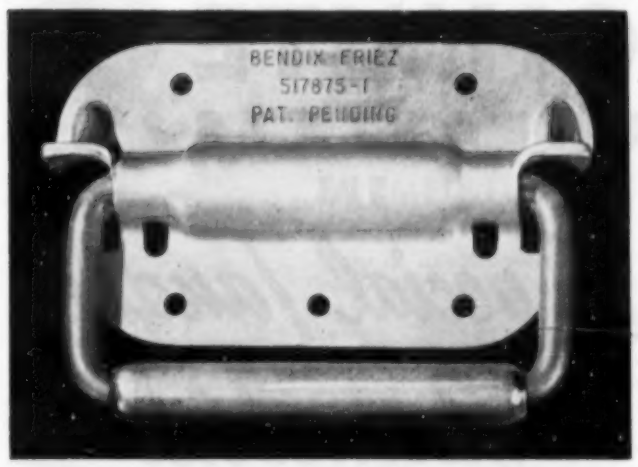
YOU'LL MAKE BIG SAVINGS in the maintenance and operation of your fluorescent installations . . . with Lustra Gold-Tone Starters. These positive-action starters instantly cut out any lamp that begins to flicker or fail . . . prevent burn-outs . . . save wasted power.

Lustra Gold-Tone Fluorescent Starters come in Push-button Reset and Automatic Reset types—both guaranteed for two years of burning service. They are ideal companions for **Lustra Double Duty Fluorescent Lamps** which are famous for their better diffusion, color constancy, and *maintained* high light output . . . Write for full information. **Lustra Corporation, Dept. P-4, 36 Washington Street, Brooklyn 1, N. Y.**

Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOT-LITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN - 4207



A NOISELESS HANDLE!

For manufacturers of portable equipment, carrying cases, parts, boxes . . . or anything that has to be lifted.

What's a large instrument manufacturer doing making handles?

We couldn't seem to find one for our own use that pleased us . . . so we made one ourselves.

Manufacturers who saw it and needed a better handle liked it. It was rust-proof. It recessed. It was rattle-proof. It has a patented "snap-back" principle. It withstands shock and vibration. It's truly rugged.

Since then, we've had a great many inquiries about our handle. They range from an aircraft manufacturer who has ideas about a flexible cargo fuselage . . . to a man who crates turtles for shipping . . . to the man who put rockets together for shipment.

But if you've got something that's got to be lifted by handles . . . chances are this Bendix-Friez handle is for you.

Built of aluminum and stainless steel, it can be riveted or welded to any kind of container or depressed in the sides. Small or large quantity orders. Inquiries answered promptly.

BENDIX FRIEZ

FRIEZ INSTRUMENT
Division of
Bendix Aviation Corporation
1428 Taylor Ave., Balto. 4, Md.

EXPORT SALES
Bendix International Division
205 E.42nd St., New York 17, N.Y. U.S.A.

If you write maker identify as IEN - 4209

PAINTING . . Portable compressor operates low pressure paint equipment

Source: ECLIPSE AIR BRUSH CO.
390 Park Ave., Dept. IEN, Newark 7, N. J.

Model 505

Capacity is 5 cfm. at 40 lb. for this new single-cylinder air-cooled motor driven compressor. It is connected directly to a ¾-hp. 110-volt 60-cycle ac. motor and is mounted on a two-wheel truck equipped with semi-pneumatic wheels. The assembly weighs 160 pounds. It measures 24 by 26 by 26 inches.

Construction includes a tamper proof unloader built into the piston head, an electric switch with thermal cutout, a safety valve, *a* kick bar to prevent upsetting and to provide a rack on which the paint hose and 20 ft. length of No. 12 extension cord can be stored. The compressor delivers to a receiver mounted on the truck beside it.

If you write maker identify as IEN - 4210

STRIPPING . . Liquid material removes organic finishes from metals

Source: NORTHWEST CHEMICAL CO.
9310 Roselawn Ave., Dept. IEN, Detroit 4, Mich.

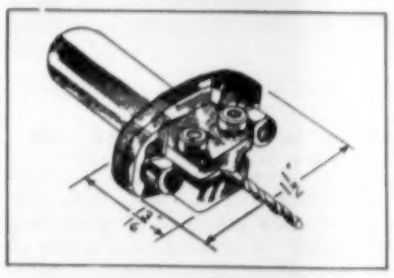
In 15 and 55 gal. steel drums

Liquid Stripper No. 6 is a new material into which steel, magnesium or zinc parts with organic finishes are dipped to remove the finishing material. The stripper liquid is non-flammable, has no odor, is non-toxic and does not give off fumes. It converts the organic finish into a soluble form that can be rinsed off. It is free from chemicals that cannot be flushed through a sewer. The liquid is used as received at temperatures from 160 to 200 deg. F. Interval required to complete the stripping action depends on the finish to be removed.

If you write maker identify as IEN - 4211

LATHE TOOLS . . Adjustable holder for No. 00 Brown & Sharpe machines

Source: BROOKFIELD INCORPORATED
172 Newbury St., Dept. IEN, Boston 16, Mass.



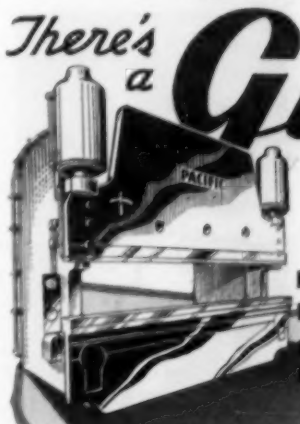
List is $22.50

Model BA-10 is a new unit in the line of lathe tool holders previously described IEN-1835-53. The new unit takes tool shanks from 1/64 to 5/16 inch. Its own shank measures ⅝ by 1⅛ inches. Flange height at the center is ⅞ inch. Its small physical outline, light weight and adjustable V-jaw, with axial true design and balanced pressure locking assembly, feature the construction. Need for bushings or other holding accessories is eliminated by the V-jaw.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4212

There's a **Giant** *growing in the West*



PACIFIC Press Brakes Now Outsell All Competitors Combined in California and Oregon

This Revolutionary Hydraulic Press Brake, First Introduced in 1946, Has Gained a Tremendous Acceptance by Western Industry and Is Now Rapidly Casting Its Shadow Across the Entire Nation.

THE PACIFIC is the very modern, advanced press brake designed for 1954—It can't be JAMMED—It can't be OVERLOADED—The stroke length is immediately ADJUSTABLE to match the job; imagine changing from a 1" to a 36" stroke in a few seconds! THE PACIFIC HYDRAULIC PRESS BRAKE is VERSATILE—It can be used for Deep Drawing, Heavy Punching, Air Bending, even Straightening. Custom presses can be delivered in a few weeks. Prices are competitive including freight costs from the West Coast. Sales and service available in all major cities.

PACIFIC INDUSTRIAL MFG. CO.
848 - 49th Avenue - Oakland, Calif.

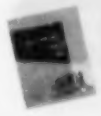
If you write maker identify as IEN - 4213

Laying heavy ribbon of sealing compound on metal cabinets

PUMP SEALING COMPOUNDS

DIRECT FROM ORIGINAL CONTAINERS WITH ALEMITE VERSATAL PUMPS

★ Air operated—apply material easier, faster—at less cost.
★ Get positive, uniform delivery through long lines—*safely*.
★ Lay hundreds of lineal feet per man-hour—with far less product spoilage.



FREE Send now for idea book. How Alemite Versatal Equipment can speed, simplify your handling problems. Write Alemite, Dept. B-44, 1830 Diversey Parkway, Chicago 14, Illinois.

ALEMITE *Versatal* SPRAY-PUMP EQUIPMENT

If you write maker identify as IEN - 4214

NOW BETTER BIGGER SMALL PARTS INSPECTION

A 1001 products from pen points to fine fabrics, dies, casts and molds to intricate surface detail quickly inspected with the

'MICROCARD READER'

EASY TO CARRY— SET UP ANYWHERE

Here's the new, economical method of "pin point" accuracy in inspection of small parts and products. Control your quality by instantly magnifying the smallest part 23 times for accurate, detailed inspection. The Microcard READER is the low cost way to higher quality for you. WRITE TODAY FOR COMPLETE INFORMATION ON "INSPECTION APPLICATIONS" IN YOUR INDUSTRY.

THE MICROCARD CORP.
READER DIVISION
Box 314D
LA CROSSE, WIS.

If you write maker identify as IEN - 4215

ALUMINUM LOUISVILLE LADDERS

NEW MASTER PLATFORM

WITH THOSE PLUS FEATURES FOR INDUSTRIAL MAINTENANCE

Extra sturdy, extruded aluminum side rails double riveted to wide facing flange of the extruded steps. Special reinforced braces on both sides of the bottom step and on all horizontal braces fastened to the extra large back legs. Platform area is 14 x 19 inches made of special hat shaped sections with knurled surfaces. Guard rail top recessed to provide ample leg room. Serrated step treads... corrugated rubber feet.

The RESULT . . .
GREATER STABILITY
LONGER SERVICE

LOUISVILLE LADDER COMPANY
1101 W. OAK ST. • DEPT. 2B • LOUISVILLE 10, KY.

If you write maker identify as IEN - 4216

Electric "Walkie" Truck High Stacks in 6 foot Aisles!

Lewis-Shepard JackStacker Trucks give you full Electric Fork Truck service in economical, space saving "walkies". Have rigid channel construction telescoping masts . . . stack 48" long loads over 10' high in aisles *less than 6' wide!*

JackStackers offer you these exclusive features:

Handle-head controls—lift; lower; tilt; forward and reverse; speed and brake; all within easy fingertip reach.

Dead man electric brakes—extra safety for your operators; brake operates on power switch with handle in any position.

L-S Hydraulics — high pressure lift and tilt mechanisms use less power.

Articulated Linkage — non-counterbalanced models are easy on floors, save wear and tear on drive motors.

Be your own judge! "Electric Walkie Truck Comparison Charts" help you check competitive makes point-for-point . . . help you select the truck best suited to your needs. Write for charts and catalogs.

Nationwide Service — see "Trucks, Industrial" in your Yellow Pages

LEWIS-SHEPARD

333-4 WALNUT ST., WATERTOWN 72, MASS.

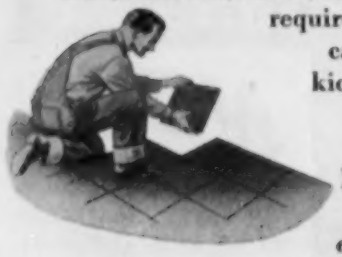
The "MASTER" Line

If you write maker identify as IEN - 4217

Uncle Sam gets MORE than his money's worth . . . with MASTIPAVE

PABCO's *super-tough, non-slip, resilient, low-cost* FLOOR COVERING

Why has Uncle Sam, like private industry, purchased millions of yards of Pabco MASTIPAVE? Because Army and Navy installations, barracks, offices, hospitals, warehouses, require floor covering that can take the grueling kick, scrape and scruff of day-in, day-out destructive use. MASTIPAVE will prove to you in *dollar savings* why it is America's Number One low-cost, long-life floor covering. In rolls and tiles. Terra Cotta and Black. For full information on MASTIPAVE . . .



FILL OUT THIS COUPON

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. B nearest office)

GENTLEMEN: Without cost or obligation to me, please send your folder, "Every Building needs Pabco MASTIPAVE."

NAME _____

ADDRESS _____

CITY _____ STATE _____

If you write maker identify as IEN - 4219

PUMP . . Motor driven centrifugal, portable for sump duty, 5 gpm. at 6 ft.

Source: GORMAN-RUPP COMPANY
Box 355, Dept. IEN, Mansfield, Ohio

Model 9A5-H1

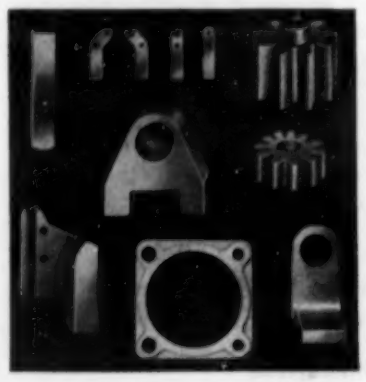
Durez phenolic plastic is employed in the two-part motor housing and pump housing on this new sump pump. The handle is made of the same material. The tube between the motor and pump housings is laminated phenolic plastic. The pump employs a 1/55-hp. 110-volt ac. motor. It delivers through 10 ft. of discharge hose. It is controlled by a float switch to stop pumping when water level is 1½ in. from the bottom and to cut in when it reaches any greater level up to 12 inches.

Mounting is on steel feet equipped with suction cups. The unit plugs into a power source through a 6-ft. extension cord. The plastic parts are resistant to attack by a wide range of liquids. Impact strength is high. The glossy black finish is attractive in appearance.

If you write maker identify as IEN - 4220

STEEL . . Stainless powder to manufacture pressure molded parts

Source: ALLOY METAL POWDERS INC.
238 Eagle St., Dept. IEN, Brooklyn 22, N. Y.



Typical products

Stain-Alloy is a new 18-8 low carbon stainless steel powder. It is a bright free flowing material that will pass through 150 mesh and contains approximately 60 per cent that will pass through 325 mesh. The powder is substantially free from surface oxidation. It is moldable at compacting pressures of 30 to 50 ton per square inch. Recommended sintering temperature is 2,100 deg. F. The material can be used, in addition to parts fabrication, in welding alloys, metallic paint.

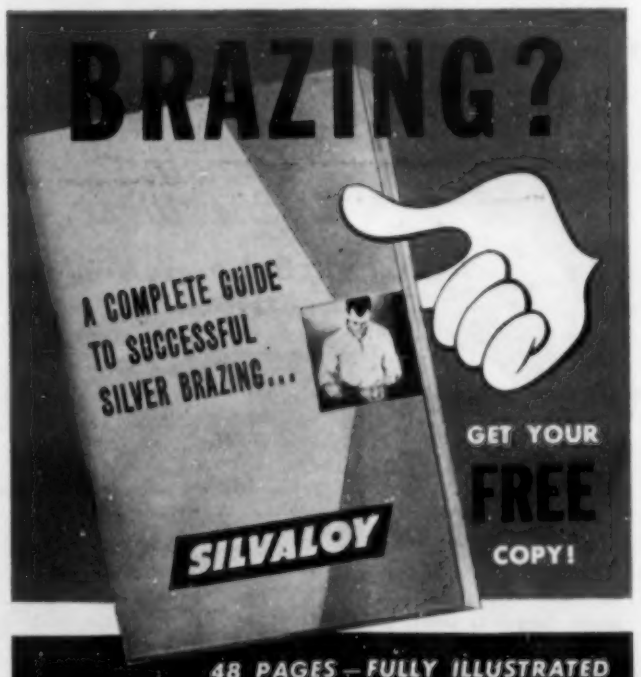
If you write maker identify as IEN - 4221

For about $40 you can purchase a rectangular steel bin from Oil-Dri Corporation, 520 N. Michigan Ave., Dept. IEN, Chicago 11, Ill., to hold that company's granular oil absorbing material in safe, accessible supply. A bracket on the side of the bin provides a place to hold a shovel. A slot feeds the material to an opening near the bottom from which it can be shoveled out quickly. Capacity is 150 pounds. A screen at the top takes sweepings from the floor to separate out steel chips and scraps of paper and other foreign material so the absorbent drops back into the bin to be used again.

All Makers of These and All Other Products Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4222

BRAZING?



48 PAGES — FULLY ILLUSTRATED

Get this compact library of brazing data hat every design and production engineer — every brazing technician and buyer of brazing materials should have! It is the most complete guide available. Send for your free copy today.

THE AMERICAN PLATINUM WORKS
231 New Jersey Railroad Avenue • Newark 5, N. J.

If you write maker identify as IEN - 4223

FREE *Send for your copy today*

NOW . . . You can choose the RIGHT Industrial Work Glove for EACH Job . . .

by using the handy Hood Performance Chart

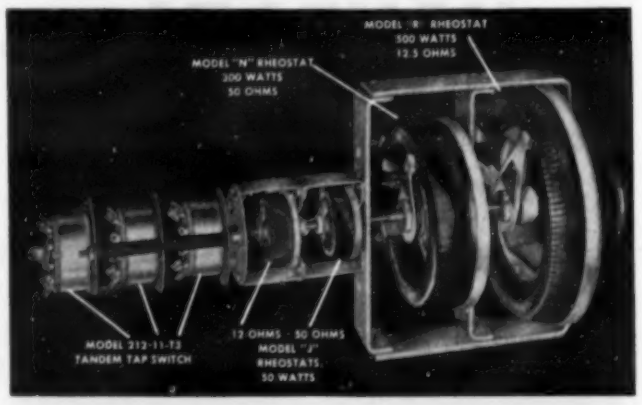
Chart shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves; catalog contains eleven more pages of illustrations and description of Hood Industrial Gloves; the choice for *every* job in *any* industry.

HOOD RUBBER CO.
Watertown, Mass.

If you write maker identify as IEN - 4224

OHMITE® RHEOSTATS IN *Special Tandem Assemblies*

MADE TO ORDER TO SOLVE YOUR UNUSUAL CONTROL PROBLEMS



The above device was specially developed by Ohmite engineers to solve an unusual control problem—how to test and demonstrate various methods of A-C motor speed regulation *with one-knob control.* The result was a special combination of four standard Ohmite rheostats and three standard Ohmite 11-position switches, all coupled together in tandem, and operated by one knob. Any or all units can be connected in the test circuit or wired in any desired fashion. This is only one of innumerable combinations of rheostats, resistors, and tap switches that Ohmite can engineer for special jobs. Why don't you consult Ohmite about your own special control problems.

Write on Company Letterhead for Catalog and Engineering Manual No. 40

OHMITE MANUFACTURING CO.
3619 Howard St., Skokie, Ill.
(Suburb of Chicago)

Be Right with **OHMITE**

RHEOSTATS • RESISTORS • TAP SWITCHES

If you write maker identify as IEN - 4226

ELECTROSTAKE CUTS COSTS
at Eastman Kodak

The Eastman Kodak Company uses ELECTROSTAKE—the automatic solenoid-operated staking machine—to stake shutter parts for Brownie Hawkeye cameras. ELECTROSTAKE presses the assemblies together—then *automatically* delivers the staking blow. Better control of the impact cuts scrap . . . and because ELECTROSTAKE is faster and simpler to use, operators are able to stake far more shutter parts than they could on foot-powered machines.

Delivers impacts up to 3500 lbs.—hold-down pressure can be pre-set from 0 to 20 lbs. Economical to buy, operate and maintain. Plugs into any 115 V., A.C. outlet.

Write — or phone Bigelow 4-6370 — for folder showing complete line of Black & Webster electric production tools.

BLACK & WEBSTER, INC.

Dept. 17, 445 Watertown Street, Newton 58, Mass.
Solenoid-operated Production Tools

If you write maker identify as IEN - 4227

DO YOU USE *Oilers* OR FORMED TUBING?

Stocks of standard oilers and oil cups as listed in our new catalog are now carried at our factory in Detroit. Complete manufacturing facilities are available for your requirements for special oilers and lubricating devices.

Our facilities for both high volume and small quantity runs of special tube forms are at your disposal. We shall be pleased to quote, submit samples or aid in design of any oiling devices or special formed tube parts, the following being a few of the many parts we can make:

Spacers	Oil Lines
Bushings	Tube Assemblies
Vent Tubes	Orifice Tubes

Write for our new catalog today.

EYNON-DAKIN CO.
9906 Freeland Ave., Detroit 27, Mich.

If you write maker identify as IEN - 4228

New 15-inch Size Rotary Index Table
Air operated, 4 to 30 positions

MODEL 1405

New larger size of our Index Table has a 15-inch top and is rotated by a 3½-inch air cylinder operating on 60 to 175-lb. pressure. It operates positively. Controls are adjustable for speed and for cushioned stop. In a test with a 200-lb. load 22 in. in diameter using an 8-station ring, indexes were made at a rate of 100 per minute.

Standard table is supplied with a 4, 6, 8 or 12-station ring. Other rings to 30 indexes will be supplied to order. Speed is variable from 6 to 100 indexes per minute. Mounting can be horizontal or vertical.

Designed for use on punch presses, air or hydraulic presses, drilling machines, to handle parts or fixtures for drilling, tapping, staking, trimming, riveting. A Micro switch prevents rotation when locked.

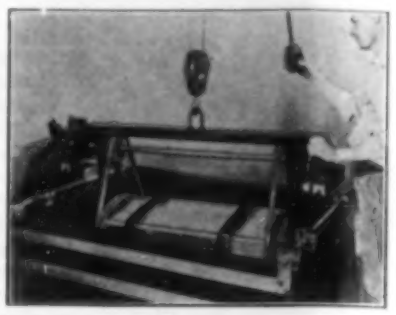
1954 Catalog on request

AIR-HYDRAULICS INC.
809-13 Belden Avenue • Jackson, Mich.

If you write maker identify as IEN - 4229

PLATING . . Barrel equipment is suspended and rotated by V-belts

Source: G. S. EQUIPMENT COMPANY
5317 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio



Bulletin GSB-101

The barrel in this new Gill-Singleton equipment is suspended in its tank from a superstructure by two V-belts of equal length running from drive shaft sheaves to grooved circumferences at both ends. The belts support the weight of the cylinder and also rotate it. They are made of acid and alkali resistant composition. They are rated at 1-ton load capacity and are resistant to attack by heat to somewhat more than 200 deg. F.

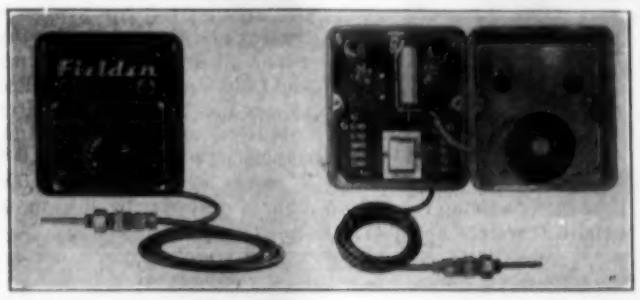
A V-block, inverted at each end of the superstructure, provides self-cleaning cathode contact. A guide channel directs the superstructure as it is lowered into operating position on the tank. It seats the V-blocks on the round cathode rods located on the tank rim.

U-plates of self-locking design are fitted over the floating hubs at each end of the cylinder. They slide out to unlock the assembly and permit cylinder change in about 4 minutes. The cylinder itself is ribbed design, made of the company's Sincolite, in fusion welded assembly. It is not subject to attack by acid or alkaline solutions at temperatures to 200 deg. F. The barrel is available in a range of sizes to specification and in single and multiple assemblies.

If you write maker identify as IEN - 4230

CONTROL . . Electronic instrument to regulate a process temperature

Source: FIELDEN INSTRUMENT DIVISION
2920 N. 4th St., Dept. IEN, Philadelphia 33, Pa.



Sensitive and stable for general use

The detector element in this new Series 97 temperature controller is a resistance unit. It is employed as the sensing device in a bridge circuit in connection with a high gain phase sensitive amplifier relay. A dial is turned to set the control point. Red and green lights indicate whether the temperature is above or below the set point.

The control contact is single-pole two-way design. It is rated at 5 amp. on 220-volt ac. Temperature ranges are standard at 0 to 100, 300 or 500 deg. F. or C. Any range, between minus 200 and plus 500 deg. C., can be supplied to specification. Sensitivity is within 0.1 deg. F. The two-tube assembly is in a cast aluminum housing 6½ by 4 by 7½ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4231

Which of these Materials Needs More *Efficient* Handling in Your Plant?

abrasive solids and chemicals in suspension • acid slurries and sludges • caustic liquors • milk of lime • soda ash • tailings • slag • ore concentrates • residue from filters and classifiers • coal • silt • washery solids • cement and glass sand slurries

Delivered 'round-the-clock (with fewer breakdowns) by

MORRIS TYPE R SLURRY PUMP

Longer uninterrupted service because:
- No internal studs to cause leakage
- Low pressure stuffing box practically eliminates packing troubles
- Impeller and liner removed without disturbing piping
- Moving parts available in various corrosion/abrasion-resistant alloys

Specifications and operation data on request. No cost — no obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Representatives in Principal Cities

MORRIS *Centrifugal Pumps*

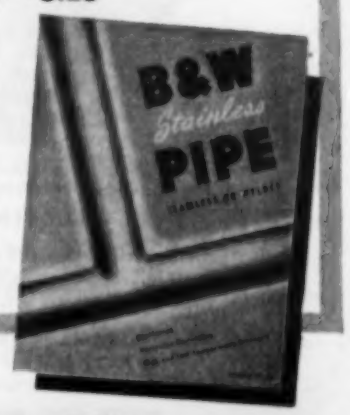
If you write maker identify as IEN - 4232

How to Select Stainless Steel Pipe

(SEAMLESS OR WELDED)

Type — Grade — Size

New B&W Bulletin TB-356 discusses sanitation, corrosion resistance, high and low temperature strength; suggests best methods of bending and joining. Write for your copy today.



TA-4030(LP)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN - 4233

LOGAN AIR AND HYDRAULIC POWER

SPEEDS • COORDINATES • REFINES PRODUCTION IN OVER 10,000 INDUSTRIAL PLANTS

Logan

AIR-DRAULIC® FEED-CONTROLLED **CYLINDERS**

COMBINES the fast-acting, economical low-pressure operation of **AIR** with the smooth, uniform controlled regulation of **OIL**

5 STANDARD MOUNTING TYPES
Standard bores from 3" to 8". Standard strokes to 5'.

LOGAN MANUFACTURES 6,975 STANDARD CATALOGED ITEMS • CATALOG ON REQUEST
Let Logan Engineers help you design your Air and Hydraulic Circuits.

LOGANSPORT MACHINE CO., INC.
813 Center Avenue Logansport, Indiana

If you write maker identify as IEN - 4234

IF YOU USE INDUSTRIAL FABRICS OR TAPES

You Should Have These

FLIGHTEX

FLIGHTEX FABRIC

SWATCH BOOKS

Our staff of engineers is at your service to help solve your fabric and tape problems.

☐ GLASS ☐ COTTON
☐ VINYON ☐ DYNEL
☐ ORLON

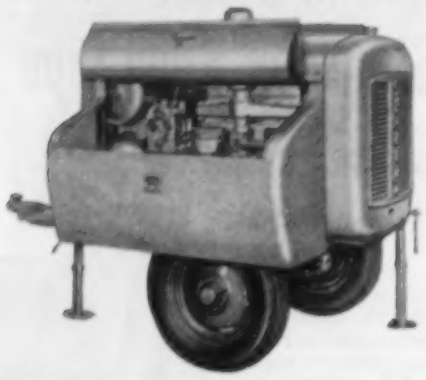
Please send the swatch books checked.

NAME .....
FIRM .....
ADDRESS .....
CITY ..... STATE .....

FLIGHTEX FABRICS, INC.
91 WORTH STREET
New York 13, N. Y.

If you write maker identify as **IEN - 4235**

AIR FOR SHOP OR MAINTENANCE . . .



Model 60-C.F.M. Complete engine driven portable air compressor mounted on two wheel trailer with large size tool boxes.

AN IDEAL COMBINATION FOR . . .

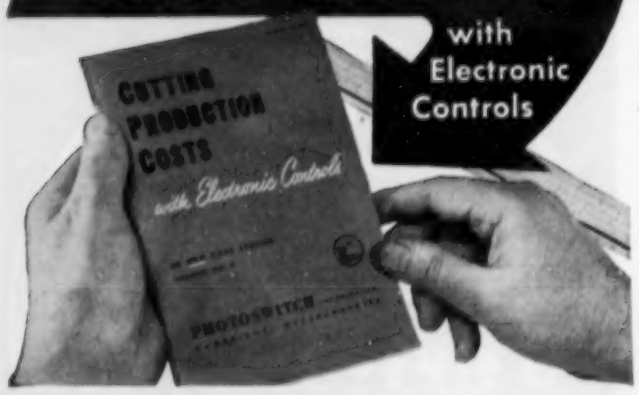
- **GENERAL SHOP UTILITY WORK**
  Paint Sprays, Riveting Guns, Impact Wrenches, Grinders, Sanders, etc.
- **FOR OUTDOOR MAINTENANCE**
  Rock Drilling, Paving Breaking, Demolition, Trench Digging, Backfill Tampers, etc.

WRITE FOR BULLETIN AED

SCHRAMM, INC.
WEST CHESTER, PA.

If you write maker identify as **IEN - 4236**

46 tested ways to SAVE MONEY with Electronic Controls



A completely revised edition of the handbook that has become the "bible" of electronic control for thousands of engineers and production executives.

Newly edited, with 46 new case studies showing how standard packaged electronic controls have solved many industrial problems you're likely to meet. It explains clearly and factually, without hocus-pocus, tested ideas for achieving new efficiency through "Electron-eered" counting, weighing, measuring, timing and cycling.

Send for your FREE copy now!

Photoswitch Incorporated
Dept P7-4, 77 Broadway, Cambridge 42, Mass.

If you write maker identify as **IEN - 4237**

PRECISION MOLDED RUBBER PARTS

Don't let the performance of your products suffer from inferior molded rubber parts . . . parts that are not true to dimension or that do not stand up because of poor quality or wrong compound. Houghton's years of service to equipment manufacturers in supplying synthetic rubber packings are at your service for precision molded rubber parts. Mail the coupon below, or write for information. E. F. Houghton & Co., 303 W. Lehigh Ave., Phila. 33, Pa.

HOUGHTON & CO.
Ready to give you on-the-job service . . .

E. F. HOUGHTON & CO., 303 W. Lehigh Ave., Phila. 33, Pa.

Name _____

Company _____

Address _____

City _____ Zone ____ State _____

If you write maker identify as **IEN - 4238**

SEALING . . Flexible sleeve to retain lubricant and exclude dirt

Source: A & A MFG. COMPANY
2017 W. Clybourn St., Dept. IEN, Milwaukee 3, Wis.

Bulletin AH-2

Flexible action is provided in three planes, one axially and two laterally, by this new representative unit in the company's Gortite-Sleeve line of equipment sealing and protecting devices. Each design is made to fit a given installation employing neoprene base materials in suitable thicknesses and various types of end fitting that slide or clamp into place.

The material is not subject to attack by lubricants. It remains serviceable in a temperature range between minus 65 and plus 220 deg. F. Stock ring sizes, of the accordion type telescopic sleeve, range from ⅝ to 8¼ in. in inside diameter and from 2 to 11¼ in. in outside diameter. A ¾ by 2¾-in. unit is maximum at 24 in. in extended length, minimum at 2½ in. in closed length.

If you write maker identify as **IEN - 4239**

PUMP . . Air-operated hydraulic to 30,000 lb. on 80-lb. air input

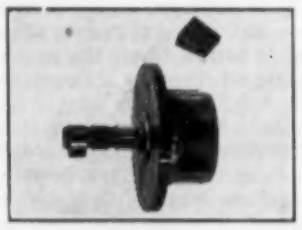
Source: SO. CALIFORNIA HYDRAULIC ENGINEERING CORP.
6318 S. Central Ave., Dept. IEN, Los Angeles 1, Calif.

For pressure testing

Model 10-302 is a new air operated hydraulic pump in which a large air driven piston drives a small fluid piston in connection with a pilot selector valve that prevents stopping or stalling. The hydraulic side is particularly suited for pressure test applications employing either oil or water. Discharge and fluid volume are controlled by an air pressure regulator installed on the input side. Capacity is 2½ gpm. at 1,000 lb., 8 cu. in. per min. at 30,000 pounds. The pump measures 7⅝ in. in diameter by 15⅝ in. in height. It weighs about 35 pounds.

If you write maker identify as **IEN - 4240**

Eight little magnets, permanent design supplied by Carboloy Dept., General Electric Co., Dept. IEN, Detroit 32, Mich., are employed in construction of a generator for use on a motor bike. The generator operates off the engine cam shaft. It supplies current for ignition, accessories, battery charging and lights. The magnets are in a soft metal cylinder beneath the cam shaft gear.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4241**

Headquarters for

ALMCO Supersheen SPEED FINISHING

BARREL FINISHING COMPOUNDS

40 different scientifically combined compounds. With the huge selection you can choose *the specific compound* which will provide optimum results on a given job. Also, special custom made compounds. WHAT IS YOUR FINISHING PROBLEM? Write.

FREE CATALOG

52 pages of money-saving facts, figures. "Before and after photos". The latest on equipment, compounds.

ALMCO Supersheen

AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT - MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as **IEN - 4242**

THE TWIN TUBE POCKETSCOPE® BY WATERMAN

MODEL S-15-A

Wt. 16¼ lbs.
12" x 6" x 7"

A new concept in multiple trace oscilloscopy made possible by Waterman developed RAYONIC rectangular cathode ray tube, providing for the first time, optional screen characteristics in each channel. S-15-A is a portable twin tube, high sensitivity oscilloscope, with two independent vertical as well as horizontal channels. A "must" for investigation of electronic circuits in industry, school, or laboratory.

Vertical channels: 10mv rms/inch, with response within —2DB from DC to 200kc, with pulse rise of 1.8μs. Horizontal channels: 1v rms/inch within —2DB from DC to 150kc, with pulse rise of 3μs. Non-frequency discriminating attenuators and gain controls, with internal calibration of traces. Repetitive or trigger time base, with linearization, from ½cps to 50kc, with ± sync. or trigger. Mu metal shield. Filter graph screen. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

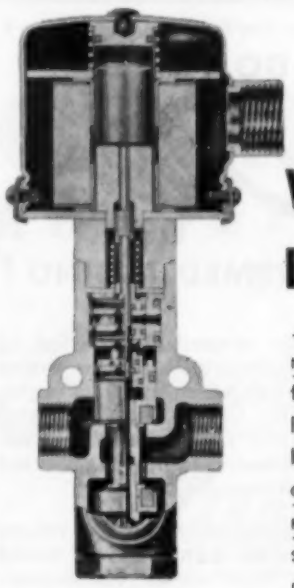
WATERMAN PRODUCTS INCLUDE:

S-4-A	SAR	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE
S-14-A	HIGH GAIN	POCKETSCOPE
S-14-B	WIDE BAND	POCKETSCOPE

Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

WATERMAN PRODUCTS

If you write maker identify as **IEN - 4243**



WHERE COST IS IMPORTANT

. . . long service life without maintenance is the deciding factor. Wherever comparative life tests and cost comparisons have been conducted in actual operation, based on user's own records, Crescent Valves* have shown material reductions in maintenance expense. In a few months, such savings generally amount to more than the purchase price. We invite comparison in your own plant.

*The products of Crescent Valve Co. include Solenoid 4-way, 3-way, and shut off valves in pipe sizes from ¼ to ¾ inch. Write for catalog. 3C-1.

BARKSDALE VALVES
5125 ALCOA AVE., LOS ANGELES 58, CAL.

If you write maker identify as **IEN - 4244**

New! Incomparable!

dyna-trol
ELECTRIC FURNACES

COMPARE THESE FEATURES

- Infinite Zone Control to 2000° and 2300°F
- Zone temperature indication by Pyrometer Selector Switch
- Porcelain Element Holders
- Automatic Hold and Cut-off instrument available
- Infinite Variety of Time-Temperature Curves Obtainable
- Rugged Construction. Highest quality insulation used.

COMPARE THESE PRICES

Firing chamber (H. W. D.)	Semi-Auto. prices	Auto. prices
6"x12"x12"	$295.	$432.
12"x12"x12"	$405.	$550.
9"x 9"x18"	$480.	$625.
14"x14"x14"	$525.	$680.
20"x20"x20"	$975.	$1140.
18"x18"x36"	$1125.	$1375.
(To 2000° Maximum Temp.)		

Over 40 Standard Models — Write for complete literature

L&L INDUSTRIAL DIVISION
MANUFACTURING CO.
Chester 30, Pa.

Some Territories Available For Representation

If you write maker identify as IEN - 4245

—for
"INSTRUMENT-QUALITY"
AIR
IN COMPRESSED AIR OPERATIONS...

HERE'S YOUR ANSWER!

HANKISON
MODEL B-30-D
Condensifilter

Featuring the New-Economical
DISPOSABLE FILTER CARTRIDGE

Dehydrate and filter ordinary plant air with a Hankison Model B-30-D Condensifilter for air of "Instrument-Quality." Condenser section removes moisture by lowering dew point of air to within 2 or 3 degrees of cooling water; low cost, disposable filter cartridge with 540 sq. in. of surface area removes even finest dirt particles. Capacity: 30 scfm at 100 psig.

Write for Bulletin B-30-D
For larger capacities, write for data on Model A-100.

HANKISON CORPORATION
350 BILTMORE BLDG. • 951 BANKSVILLE ROAD • PITTSBURGH 16, PA.

If you write maker identify as IEN - 4246

Look To The Leader For Lubricating Devices

GITS

40 Years' Leadership

Yes, for 40 years GITS has been setting the standard for industry... solving tough lubricating problems...earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".

Low Cost

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production... and GITS oil cups cost so little.

World's Largest Selection

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose.*

Consistent Top Quality

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best . . . get GITS.

Write Today
for FREE CATALOG *No. 60 A*
Use it as your
handy reference for lubricating devices

Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges, Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod Styles. Threaded or Drive-Type, Elbow or Straight.

GITS BROS. MFG. CO.
1854 S. Kilbourn Ave. Chicago 23, Ill.

If you write maker identify as IEN - 4248

TRUCKS . . Load pusher attachment to slide a load from a fork truck

Source: ELWELL-PARKER ELECTRIC CO.
4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio

For specified use

Hydraulic pressure, from the regular circuit on the company's fork truck, is employed in two telescoping cylinders to move a pantograph supported pusher screen forward from the heel of a truck's forks. The forward movement slides a load off the forks, as shown in the illustration, and suits the truck to handle loads without pallets or with a sheet of metal or non-metallic materials as the load base.

The supporting linkage is designed for adjustment in the event of wear. The pin connections are hardened steel to operate in hardened steel bushings. Each pin is equipped with a pressure grease fitting. Pushing action takes place at the screen base where load weight is concentrated.

If you write maker identify as IEN - 4249

MELTING . . Electric pot to dip solder printed electric circuits

Source: VULCAN ELECTRIC CO.
88-90 Holten St., Dept. IEN, Danvers 8, Mass.

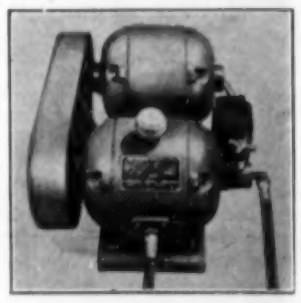
For tinning printed circuits

Replaceable electric heating elements are clamped to the under-surface of the pot casting that mounts in an insulated sheet metal housing in this new rectangular melting pot. The elements are controlled by a thermostat to maintain a desired temperature in solder employed in printed circuit work. Work chamber dimensions range from 6 by 12 in. to 12 by 12 inches. Depth is from 1 to 4 in. as specified. Operation is on 110 or 220-volt input, also to specification.

If you write maker identify as IEN - 4250

PUMP . . Wobble plate design with motor, rates 2 gpm. at 8,800 lb.

Source: MANCO MFG. CO.
Grove & West, Dept. IEN, Bradley, Ill.



Series Hi-Thrust

The company announces a new combination of six-piston wobble plate hydraulic pump assembled on a base with a motor rating 2, 3 or 5 hp. for operation on 220/440-volt ac. The pump displaces 57 cu. in. per revolution. It can be supplied for operating speed at 900 to 2,200 rpm. It is intended for intermittent utility duty and is ready for connection to electric and hydraulic lines.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4251

No More AIR LINE *Maintenance*
due to internal condensation!

Do away with manual draining of your compressed air lines and get full protection for your plant equipment and tools. Positive action of these automatic units blasts out water and sludge with practically no pressure drop.

Designed for high efficiency in forcing condensation, these separators are full capacity in size and shape for the size lines they serve (there's a direct relationship). Units for every line size from ¼" to 2", also for tanks, sumps, compressors, aftercoolers, etc....Manual drains also available.

There is a Wilkerson model for every possible set-up. Write for literature on your company letterhead.

USE WILKERSON *Automatic* MOISTURE SEPARATORS

WILKERSON CORPORATION
3469 S. Platte R. Dr., ENGLEWOOD, COLO.
Service-distributors in most U. S. cities.

If you write maker identify as IEN - 4252

NEW COLD WOOD GLU SETS IN 20 MINUTES!

A Better All-Purpose Industrial Glue

WOOD GLU is a very strong, *fast-setting new* COLD liquid Resin Glue . . an outstanding Paisley scientific development. Now you can bond, *in 20 to 30 minutes,* many different materials heretofore impossible to join with ordinary Wood Glues.

Paisley WOOD GLU is ideal for industrial wood joining operations. Also for faster assembly gluing and bonding of laminated plywood, paperboard, fabrics, leather and similar porous materials. Use it as received, with flow guns, brushes, spreaders. Mail the coupon order form below for trial shipment, on approval!

Gentlemen: Ship on approval, f. o. b. Chicago or New York, the WOOD GLU indicated below: ____ cases 12/qts. @ $2.10 qt. ____ cases 4/1 gals. @ $6.00 gal. ____ 5 gal. cans (bulk) @ $5.50 gal.

Paisley ADHESIVES

Name _____
Address _____ City _____ State _____

PAISLEY PRODUCTS INCORPORATED
Division of MORNINGSTAR, NICOL, INC.
1770 CANALPORT AVENUE, CHICAGO 16, ILLINOIS • PHONE CANAL 6-2219
630 WEST 51st STREET, NEW YORK 19, N. Y. • PHONE COLUMBUS 5-2860
Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products

If you write maker identify as IEN - 4253

IN ONE MINUTE'S TIME
AWS Class E-6012 electrode produced this fillet.

THIS MUCH MORE WELD
was made in the same time in the same steel plate

with the new AIRCO EASYARC 12 *electrode*

Actual length of welds: E-6012—5 1/16", Easyarc 12—12". Current settings: 230 amps AC for E-6012, 275 amps AC for Easyarc 12. Both welds made in 1/4" mild steel plate with 3/16" diameter electrodes.

Write for "Pocket Guide to Airco Electrodes."

AIR REDUCTION
60 E. 42nd Street
New York 17, N. Y.

Divisions of Air Reduction Co., Inc.
Air Reduction Sales Co.
Air Reduction Magnolia Co.
Air Reduction Pacific Co.
Represented internationally by Airco Company International

If you write maker identify as IEN - 4254

LIFTS UP TO 25 TONS

Behind the 25-ton lift capacity of this Koehring 304 Truck Crane are many important features that give you big-tonnage output. On the intermittent usage of clamshell or crane work, there's no time-out for adjusting clutches. Heat-compensator spring automatically makes all tension changes, maintains full clutch efficiency at all times. Koehring booster clutch cuts normal lever pull 50%, retains accurate "feel" of load. Also checks max. 110-ft. boom length with jib, power boom lowering, 35 mph mobility. Other sizes: up to 79½ tons lift capacity.

KOEHRING COMPANY
Milwaukee 16, Wis.

Write for bulletin
KOEHRING *Truck Cranes*

If you write maker identify as IEN-4255

Your Entire Stock of Drills... Seen at a glance

HUOT DRILL DISPENSER

for

• TOOL CRIBS • STOCK ROOMS • MACHINE SHOPS

Saves Time hunting through stacks of packaged drills. Compartments hold a gross of small sizes—a dozen or more of the larger ones. Raised letters on easy sliding drawers . . . hammerlin gray baked enamel finish . . . 14½"x7¼"x7¼".

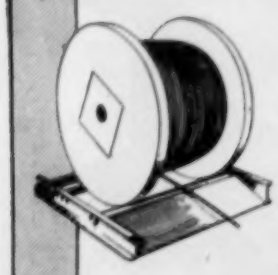
Write for Circular

Model No. 1: Fractional drills ⅛" to ½"
Model No. 2: Number drills 1 to 60
Model No. 3: Letter drills A to Z

HUOT MFG. CO.
565 NORTH WHEELER STREET
ST. PAUL 4W • MINNESOTA
"HUOT is pronounced HEW-OT"

If you write maker identify as IEN-4256

Simple as A B C



Handle heavy reels easily and safely; remove wire or cable from top or bottom, front or back of reel with

ROLL-A-REEL

Low slanted front and positive front lock insure quick loading or unloading.

Eliminate jacks and cumbersome handling.

Style A: 2,000 lbs. cap. 37.50
Style B: 4,000 lbs. cap. 75.00
f.o.b. Cincinnati

Carried easily to reels, job or storage.
Sold through wholesalers only.

WRITE FOR DETAILS

ROLL-A-REEL
1100 SYCAMORE AT CENTRAL PARKWAY
CINCINNATI 2, OHIO

If you write maker identify as IEN-4257

NEW! FLORLINE Marking Machine
FOR LINES AT WALKING SPEED—NOW WITH THIRD WHEEL GUIDE FOR FAST, STRAIGHTER LINES AT NO EXTRA COST!

- Third wheel 18" forward of carriage keeps machine "on track" long before marking begins
- Guide Wheel arm folds back at curb or wall, lets machine run right up to barrier
- Machine wheels to other areas of work with slight lift of handle
- Makes straight, curved, continuous or skip lines 2, 3 or 4" wide with interchangeable carriages
- Gravity feed, no motor or attachments, heavy gauge metal
- Holds 1½ gallons. Easy to clean and store

$97.50
F.O.B. Detroit
Fully Guaranteed

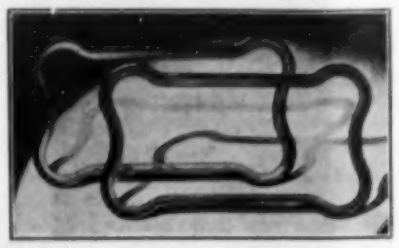
H.C. SWEET CO.
24393 W. 7 Mile Rd.
Detroit 19, Mich.

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

If you write maker identify as IEN-4258

Flexible rubber gaskets are held in specified shapes ready for application in equipment assembly by bonding them to metal rims. The rim can be shaped as required and will hold the shape during assembly to assure correct sealing. Acushnet Process Co., 760 Belleville Ave., Dept. IEN, New Bedford, Mass., has prepared a brochure, "Rubber to Metal Bonded Parts". It will send you a copy of this literature on request.

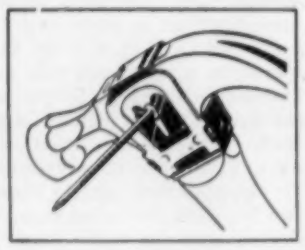


If you write maker identify as IEN-4259

Coloroute Plan is a new way to control industrial lubrication. It has been developed by Stewart-Warner Corp., 1826 Diversey Parkway, Dept. IEN, Chicago 14, Ill. It employs color symbols to control section, handling and application of oils and greases. It simplifies identification and segregation of lubricants in the oil room. It prevents mis-application in the plant. It assigns lubrication responsibility and reduces the number of required lubricants. It helps to prevent contamination, highlights hidden lubrication points and simplifies oiler's job. The company offers a Coloroute Kit containing quick drying lacquer in six colors in as many spray containers, a set of stencils, each of different design to represent the bearing frequencies of application of different oils and greases, lubrication analysis sheets, master record cards and an oil room identification chart. Ask for Form 22-243 for an illustrated description of the plan.

If you write maker identify as IEN-4260

Manufacture and sale of the Third Hand nail clip, previously described IEN-1990-52, have been taken over by Utica Drop Forge & Tool Corp., 2415 Whitesboro, Dept. IEN, Utica 4, N. Y. The clip folds in place and clamps on the head of a hammer to present spring fingers and a slot in which a nail can be positioned. The hammer is then swung to start the nail in place and is slipped off the nail head to finish the driving operation in the usual way. List price is about 80 cents.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4261

Save Time and Money—

turn to page 8

It's Yours Free!

Giant Selector Chart on page 8 shows figure sizes, actions and uses of all standard Hand Numbering Machines and Metal Daters. Makes it easy to choose the best machine for any work. Over 40 pages of other valuable information and 40 photos. Write for your copy.

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N.Y.

If you write maker identify as IEN-4262

New! Low-Cost! Wide-Range!
VARIABLE Speed Sheaves
Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

• Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Fixed shaft centers
- Automatic belt alignment
- LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

If you write maker identify as IEN-4263

A BETTER TIE AT LOWER COST

U·S·S GERRARD ROUND STRAPPING is:

FLEXIBLE—Gerrard Round Steel Strapping is easier to apply because it is "flexible" to use and it conforms and clings snugly to your package, whether it's a carton . . . crate . . . bundle, palletized . . . unitized . . . or for carload reinforcement.

DEFTLY APPLIED—Gerrard Round Steel Strapping may be applied with both the hand-operated and semi-automatic machines—quickly, efficiently.

COSTS LESS—Gerrard Round Strapping costs about 40% less than any other metal reinforcement.

• Heavy duty U·S·S Gerrard Flat Strapping is also available for palletizing, unitizing, and carload reinforcement applications. The Gerrard stretchers and sealers are simply constructed, easy to operate. Form a tight, non-slip seal.

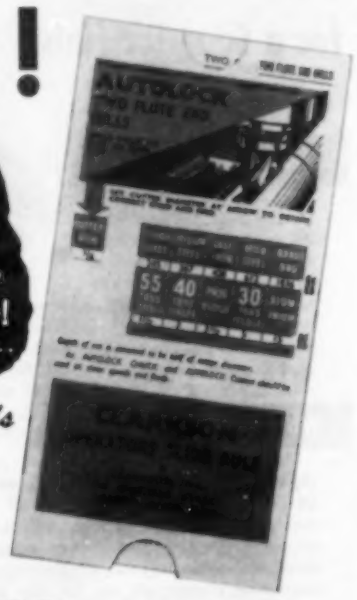
CONTACT A GERRARD ENGINEER. He will be happy to assist you in solving your packaging-tying problems—in both efficiency and economy, if possible. His advice is free—our service to you. Write for further information.

GERRARD STEEL STRAPPING DIVISION, UNITED STATES STEEL CORPORATION
4701 South Richmond Street, Chicago 32, Illinois

U·S·S GERRARD
Round Steel STRAPPING *Flat Steel*
UNITED STATES STEEL

If you write maker identify as IEN - 4265

ABSOLUTELY FREE!



The Clarkson OPERATORS SLIDE RULE.. Send for yours today! NO OBLIGATION..

Speeds and Feeds at a Glance

KNOWN AND PREFERRED THE WORLD OVER

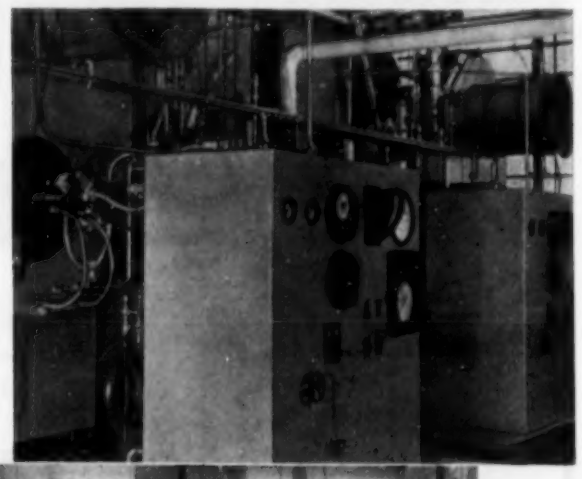
Clarkson INCORPORATED

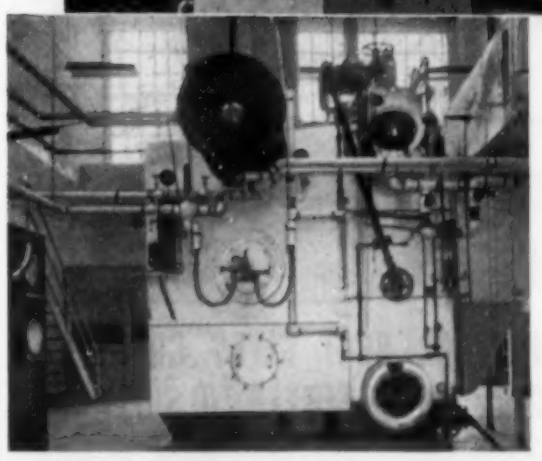
DEDLOCK CHUCKS • AUTOLOCK CHUCKS • MILLING CUTTERS • CLARKSON CUTTER GRINDERS

320 Ontario St., Toledo, O.

OFFICES AND PLANTS IN CANADA • ENGLAND • HOLLAND • BELGIUM • GERMANY

If you write maker identify as IEN - 4266





The B&W Integral-Furnace Boiler, Type FM

is compact, portable, simple, reliable

Almost one and one-half million pounds of steam capacity for building heating and allied services already have been credited to the B&W Integral-Furnace, Type FM. This shop-assembled unit, for steam loads between 2900 and 28,000 lb per hr at pressures to 235 psi, enjoys such wide popularity with users in a broad range of industrial, commercial, institutional and other classifications that, today, FM Boilers are in service or on order for a total steam capacity of more than 7,000,000 lb per hr.

Automatic control and efficient handling of variable loads are among the many features of this versatile B&W steam generator. The unit is easy to install, and is delivered complete with firing equipment for oil or gas, ready to skid or lift into position, hook-up and place in operation.

The Type FM Boiler has proved to be ideal for small to medium-sized installations where operators have additional duties . . . even for larger installations, two or more Type FM Boilers often are selected instead of large boilers requiring complete field erection and close operating supervision.

Write for Bulletin G-76B, which details the cost-saving features of the B&W Integral-Furnace Boiler, Type FM. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.

BABCOCK & WILCOX BOILER DIVISION G-630

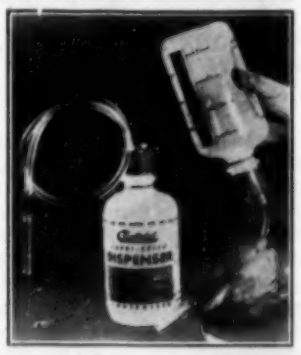
IDEAS FOR YOU—Continued

If you write maker identify as IEN - 4268

Threaded fastenings are replaced by adhesive in two assembly operations on a refrigerator. In one case the adhesive

is used to bond fibrous glass insulation strips to a one piece plastic trim frame. In the other case a Masonite disc carrying a ring of adhesive is pressed over a depression in the refrigerator compressor to enclose steel shot that act to deaden vibration and sound. Minnesota Mining & Mfg. Co., 423 Piquette Ave., Dept. IEN, Detroit 2, Mich., manufactures the adhesive and can tell you about the nozzle equipped rubber bulb with which it is applied on a production basis.

If you write maker identify as IEN - 4269



Handi-Quick is a new squeezable polyethylene plastic bottle with a transparent plastic feed tube and metal shut-off clamp to dispense fluid for hydraulic brake circuits. The end of the tube is placed in the master cylinder opening, the bottle is inverted and squeezed. Shut-off is by operating the clamp on the tube. A scale on the translucent bottle shows the amount of liquid remaining. A pint size lists at about $2.00. A quart size is $2.75. Manufacturer is Crystal Research Laboratories, 29 Allyn St., Dept. IEN, Hartford 3, Conn.

If you write maker identify as IEN - 4270

Don't be disturbed if you drop your pliers into your engine compartment or roll out from under car and forget to bring

them with you or lose them down a drain pipe. Just pick up your Recovery Magnet and put it to work. The magnet is an Alnico permanent unit in a 1-in. non-magnetic stainless steel tube. A permanent mild steel tapered plug is on the attracting end of the tube. A ⅛-in. pipe nipple drilled with a $\frac{3}{16}$-in. hole is on the opposite end. You can attach a length of pipe or tie a cord to the little 4½-in. assembly and you are all set. Eriez Mfg. Co., Grove Drive, Dept. IEN, Erie, Pa., tells us that the price is about $12.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4271

ROBINSON METERING PUMPS

FORCIBLY EJECT EXACT METERED AMOUNTS OF:

ASPHALT • RESIN • PITCH • ROSIN ADHESIVES • STEARIC ACID and PLASTER OF PARIS • PORTLAND CEMENT AND VARNISH MIXTURE • SEALING COMPOUND • POLYAMIDE • PLASTISOL PASTES • GLYPTAL MIXTURES • RUBBER BAKELITE

Melt and meter materials that are solid at normal temperatures. Easy ejection through tiny apertures.

Any of 20 discharge quantity settings can be changed in 2 seconds (one model has 50 settings) without tools.

Eject accurately .04cc to 370cc in 2/3 second.

Thermostatic heat from 70° to 500° F . . . Viscosities from #10 S.A.E. oil to 200,000 centipoises.

Unskilled operators quickly learn to do neat, clean work.

The versatile Robinson Metering Pumps may be the *economical* solution to one of your production problems. Write for free folder.

EDWARD E. ROBINSON INCORPORATED P.O. Box 47 95 PARK AVE. - NUTLEY 10, NEW JERSEY Telephone NUtley 2-4510

If you write maker identify as IEN - 4272

For safe materials handling that can be quicker too,
Install rugged, no-skid Multigrip . . . that's the thing to do.
Then your floors are well protected and last for many a year,
And workers move faster without the slightest fear.
Multigrip lasts longer . . . won't splinter, crack or rot;
Wheels and feet won't slide or slip . . . whether it's wet or not.

U·S·S **multigrip** FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 4-203A

UNITED STATES STEEL

If you write maker identify as IEN - 4273

TEDIOUS JOBS MADE EASIER

HOT PITS

FLY ASH

with SPENCER VACUUM

Tedious—and expensive jobs are eliminated in more than 100 ways with Spencer Vacuum. Hundreds of special vacuum tools have been devised—for vacuum units ranging from 1½ to 100 HP. Smaller sizes for your offices.

You can reclaim materials, remove liquids, vapors, and the finest dusts and speed up your assembly and inspection lines with Spencer Vacuum. Our representative near you has information of value on these subjects.

ASK FOR BULLETIN No. 144

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD 466-L

If you write maker identify as IEN - 4274

have you a CORROSION problem?

BOLTS • NUTS
SCREWS • RIVETS
COTTER PINS
WASHERS
SPECIALS

IN BRASS
SILICON BRONZE
NAVAL BRONZE
COPPER
NICKEL
ALUMINUM
MONEL
STAINLESS STEEL

Harper Everlasting Fastenings are corrosion-resistant—produced from non-ferrous metals and all stainless steels. For fastenings that improve the appearance of your equipment—add years to its life, call Harper—largest manufacturer in its field. Over 7,000 different items in stock to meet your requirements. Write for catalog.

HARPER EVERLASTING FASTENINGS

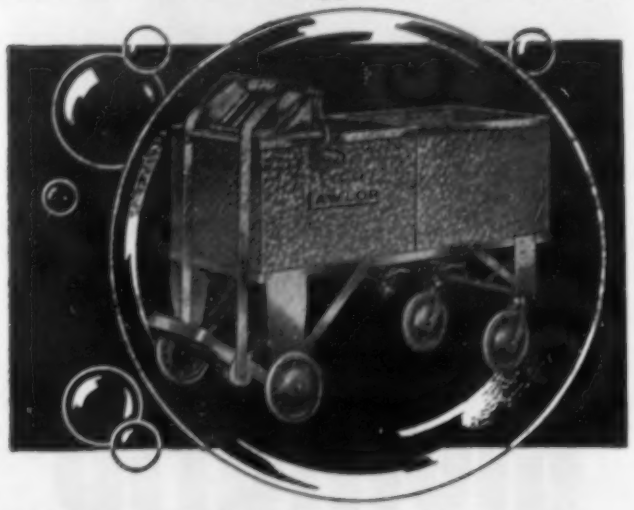
The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog 25.

Name.....
Company.....
Address.....
City..... State.....

If you write maker identify as IEN - 4275

LAWLOR MOPPING TANKS

Lead the Field in Ruggedness and Service



8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • hand or foot pressure wringers • perforated roll wringers • special drain shut-offs • hot dipped, galvanized chassis and frames • rubber tired, cadmium plated steel wheels.

Write for Catalog of Mopping Tanks, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size of floor

S. C. LAWLOR CO. *Quality Floor Equipment for 50 Years*

120 North Aberdeen Street • Chicago 7, Illinois

If you write maker identify as IEN - 4276

DO YOU HAVE THESE JOBS IN YOUR PLANT?

"SKIL has the answer"

in all metal working with more types and models of Sanders and Grinders than *any* other manufacturer!

SKIL has 27 specialized models that are newly designed, light in weight, more powerful, that pay for themselves in time and money saved. The perfect answer for grinding, sanding, finishing, polishing in any plant.

For example: How many steps do your men waste carrying tools or work to a distant bench grinder? Break *this* "bottleneck" with *new* SKIL 6" Bench Grinders by spotting several around your shop in convenient locations.

For example: You may be using the same heavy disc sanders you have had for years. Your men tire using them—complain about lack of power to do the job. SKIL has the answer in new light weight SKIL 7" Disc Sanders with *30% more power! Ideal* for use with sandpaper discs, cup grinding wheels, wire brushes and reinforced raised hub discs.

Bench Grinders · Disc Sanders · Belt Sanders · Hand Grinders · Oscillating Sanders

SKIL PORTABLE TOOLS

FREE! Let Your SKIL Distributor Prove To You With An Amazing Demonstration and a *FREE* Trial—"SKIL Has the Answer" To Your Metal Finishing "Bottlenecks."

Made only by SKIL Corporation, formerly SKILSAW, Inc. • 5033 Elston Ave., Chicago 30, Ill. 3601 Dundas Street West, Toronto 9, Ontario • Factory Branches in All Leading Cities

SEND IN COUPON—NOW!

SKIL Corporation, Dept. IEN-44
5033 Elston Avenue, Chicago 30, Illinois

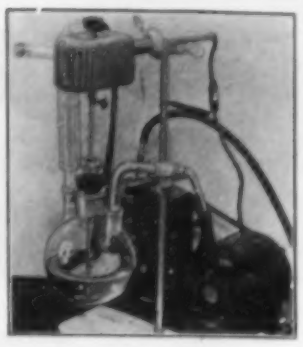
☐ I would like a demonstration and free trial
☐ Please send literature on SKIL tools

Name_____
Company_____
Street_____
City_____ State_____

If you write maker identify as IEN - 4278

MIXING . . Vibrator equipment works on liquid sealed in a flask

Source: FISHER SCIENTIFIC CO.
717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.



Variable stroke

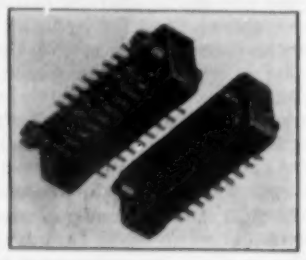
A shaft is vibrated at 120 cps. by a totally enclosed motor in this new laboratory Vibro-Mixer. The shaft does not rotate so the operator can make a hermetic seal with the flask containing the liquid and can operate under low vacuum or pressures of two atmospheres. There is no danger of dust contamination or of explosion due to sparks.

Nine stirrers and plates are included with the mixer. Globules of suspended fats and oils and finely divided solids can be disintegrated in preparation of emulsions and stable colloidal formations. Operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN - 4279

CONNECTOR . . Polarized assembly to build into electronic equipment

Source: DE JUR-AMSCO CORPORATION
45-01 Northern Blvd., Dept. IEN, L. I. City 1, N. Y.

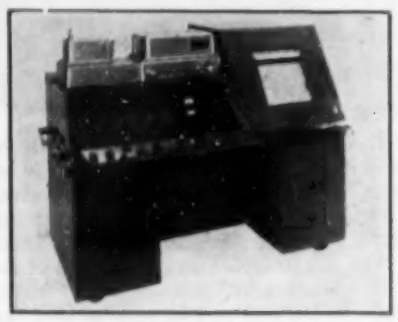


Patent pending

Polarizing guide pins and sockets are now available in the company's Series-20 miniature precision connectors, previously described IEN-4463-53. The pins provide positive means to lock the plug and receptacle against vibration or accidental disconnection. They also can be employed to disconnect the plug from the receptacle without need to pry or force it. Screw-lock is the trade name. Construction is in stainless steel.

The connector is available in 12 assemblies with 7 to 104 contacts. It can be supplied in a top opening or side opening design. Contacts are for No. 20 AWG wire. Current rating is 5 amperes. The 34-contact assembly measures 2 in. in length by ¾ in. in width.

If you write maker identify as IEN - 4280



Organizations that might use an infrared spectrometer can now obtain one on a 90-day trial installation from Perkin-Elmer Corp., Main Ave., Dept. IEN, Norwalk, Conn. The instrument is installed, serviced and the company personnel is instructed in its use at a charge of $200 if the instrument is purchased finally or $450 if it is returned.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4281

practical answer to the increasing importance of production line marking!

The INDUSTRIAL AUTO-PRINTER

Use the Industrial Auto-Printer to print your multiwall bags and corrugated containers as you need them—to speed up your production and simplify your marking problems.

Completely eliminating expensive hand stencilling, the Auto-Printer has more than met requirements for imprinting, coding, dating, addressing and other marking. Adaptable to almost any size or type of container, it prints at up to 2000 impressions per hour—legibly and accurately.

In hundreds of plants, Auto-Printers are setting appreciable records for saving marking time and labor where efficiency, accuracy and speed are demanded.

We are also prepared to design, develop, engineer and manufacture . . . to the highest standards of excellence . . . units to meet your special needs in marking and coding equipment. Full information and recommendations for your requirements will be sent on request. *Write for catalog, Department IEN.*

Industrial Marking Equipment COMPANY, INC.
454 Baltic Street, Brooklyn 17, New York • MAin 4-2601

If you write maker identify as IEN - 4282

On any steel blackening problem

DEPEND on DU-LITE for a Superior Finish

Courtesy The Poly Choke Co.

Here's an example . . .

Du-Lite gave this part with its complicated knurls, slots, threads, etc. a fine rust-resistant durable black finish. It is typical of many other parts, small and large, which have been black oxidized by Du-Lite for many years. Moreover, Du-Lite meets most individual and government specifications including 57-0-2C for Type III Black Oxide finish.

What's YOUR problem?

Du-Lite installations are simple, compact, easy to operate. Du-Lite equipment can be tailored to fit production requirements on all types of jobs with a maximum of speed and economy. Du-Lite also makes a complete line of cleaners, strippers, wetting agents, passivating agents, rust preventatives, burnishing compounds, etc. for any metal finishing application.

See your nearest Du-Lite Field Engineer or write for more information.

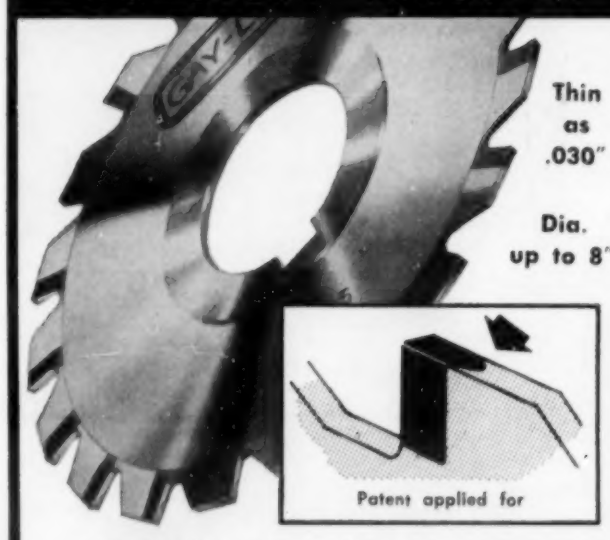
Du-Lite DU-LITE CHEMICAL CORP. MIDDLETOWN • CONN.
METAL FINISHING SPECIALISTS

If you write maker identify as IEN - 4283

CARBIDE TIPPED

THINSAW

FOR EVERY INDUSTRY



CIRCULAR SEAT GIVES GREATER BRAZE AREA—BETTER TIP SUPPORT

This exclusive Gay-Lee carbide tipped saw design has completely changed the slitting, slotting and sawing picture. Now carbide tips stay in and run-out is eliminated. You get the full benefit of carbide's faster cutting ability.

WHAT IS YOUR SAW PROBLEM?

We are specialists in carbide saw design and manufacture. We have solved some tough jobs and some big ones. Can we help you?

Hub Saw · Thinsaw · Small Saw

Carbide teeth profile ground on Special Order

WRITE FOR DATA

GAY-LEE COMPANY
CLAWSON • MICHIGAN

If you write maker identify as IEN - 4285

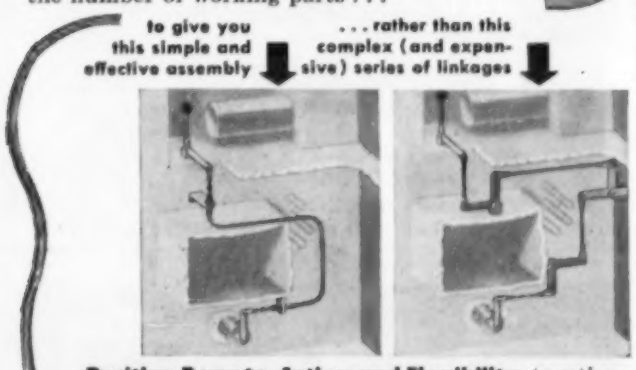
If you write maker identify as IEN - 4286

IMPROVED OPERATION OF LITERALLY HUNDREDS OF MECHANICAL PRODUCTS HAS BEEN EFFECTED WITH ACCO TRU-LAY FLEXIBLE PUSH-PULL CONTROLS

Tru-Lay Push-Pull Controls provide POSITIVE REMOTE-ACTION over long or short distances . . . with fixed or movable anchorages . . . for light loads or loads up to 1,000 lbs., and these units are frequently and successfully used in conjunction with Electric, Hydraulic and Air Controls.

Flexibility makes it possible to snake around obstructions . . . simplifies installation . . . reduces the number of working parts . . .

to give you this simple and effective assembly ... rather than this complex (and expensive) series of linkages



Positive Remote-Action and Flexibility, together with Precision and Long Life, explain why TRU-LAY PUSH-PULLS serve designers and users equally well in improving machine operations, whether the application is on such severe service jobs as Bulldozers, Power Shovels and Steel Mill Machinery, or on such light duty work as Photographic Equipment, X-Ray or Business Machines.

Immunity to Vibration makes these TRU-LAY PUSH-PULLS ideal as Remote Controls on shakers and other vibratory products.

Complete Protection Against Dirt and Moisture is a big factor in the use of this unit on machinery in Coal Mines, Cement and Steel Mills, Oil Fields and in many other industries.

Corrosion-Resistance of the unit, plated or with Stainless Steel construction as required by the use, has led to many applications in the Marine Field . . . salt water or fresh. Supplied with a rubber cover the unit operates effectively even when conduit is COMPLETELY IMMERSED.

Lubrication of the inner working member is for life.

Temperatures as low as −70° F. will not hinder the proper operation of this unit, and it is throughly effective even in the extreme high temperatures encountered on Jet Engine, Furnace Door and Glass Furnace Damper control applications.

This **IDEA FILE** *will answer most of the questions you may have in mind as to how you might make additional applications of this versatile and dependable tool. Write for a copy, without obligation.*

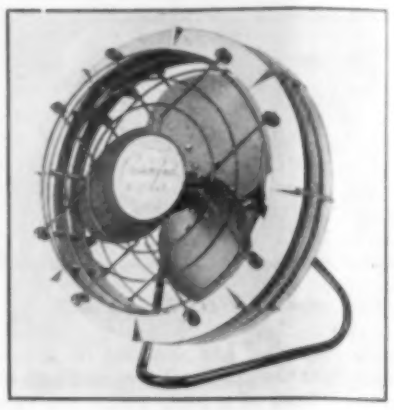
DATA FILE

ACCO
AUTOMOTIVE and AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
601 Stephenson Bldg., Detroit 2
2216 South Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

If you write maker identify as IEN - 4288

VENTILATING . . Circulating fan in five assemblies for utility use

Source: COMMANDER MFG. CO.
4225 W. Kinzie St., Dept. IEN, Chicago 23, Ill.



Bulletin G-154

Illustrated is Model-DF desk mounting assembly of the company's new 12-in. 110-volt 60-cycle ac. fan. The motor is a three-speed design. The impeller mounts inside multiple circular rings back of a chromium plated guard. Finish is in matching tones of gray. Model-PF is similar to Model-DF except for its floor stand mounting. Both can be tilted and locked for delivery at any angle.

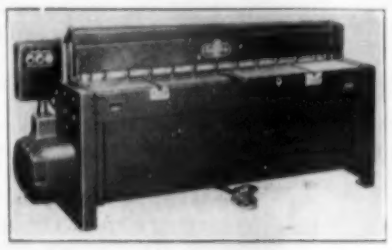
Model-HF is a vertical assembly for delivery around the circle beneath an inverted cone-shaped top baffle plate. Model-AP is a similar design except that it can be rotated for delivery in any direction and can be hung on a wall, placed on a window or suspended from the ceiling as well as positioned on a desk or floor.

Model-WV is assembled in a baffle plate to fit in a window opening. It measures 19 in. in height and can be adjusted from 26 to 36 in. in width. The impeller blades are made of aluminum designed and pitched for efficient quiet operation.

If you write maker identify as IEN - 4289

SHEARING . . Squaring machine, 18 models, air, foot and motor drive

Source: FAMCO MACHINE CO.
Dept. IEN, Kenosha, Wis.



Also for plastic sheet and paper

Model 1672, one of the eight motor driven assemblies in the company's new line of squaring shears, is shown in the illustration. It is one of four models with an Electromatic clutch mechanism and gear transmission to shear 14 and 16-gage mild steel in 36, 42, 52 and 72-in. widths. Four similar machines, also equipped with the clutch but without the gear transmission, will shear 18 and 20-gage mild steel in the same four widths.

Standard equipment on these eight motor driven machines includes front, back and side gages, hold-down, movable electric foot switch, Textolite gibs, four-edge knives, a motor and magnetic starter. Shafts ride on roller bearings. The four heavy models have individually spring loaded hold-down feet.

The air operated machines, four in number, will cut 16-gage mild steel in 36 to 72-in. widths. The foot operated line rates 16 and 18-gage mild steel in 36 to 52-in. widths and 18-gage in 22 to 72-in. widths. This design in the line includes six models, each in box table and frame construction with a steel treadle extending the length of the machine and reinforced by a torsion bar to prevent twisting.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4290

If you write maker identify as IEN - 4291

"Kodak Photorecording Papers and Films . . . how to pick the one you need"

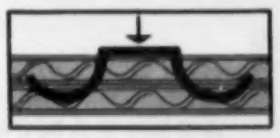
That's the title of a folder we recently published.

It gives you the details about the broad range of photographic films and papers we produce for photorecording purposes, tells you which to use for the application you have in mind, lists the various spoolings and lengths available. If you use photorecording now, or plan to use it in the future, you should have a copy. Just write to:

If you write maker identify as IEN - 4292

LOOK! A SELF-CLINCHER!

No blade to insert!
Staple spreads itself under or inside the work!



Bostitch T5 Tacker with outward clinch

Use it for stapling insulation around pipes and ducts . . . fastening shipping tags to corrugated containers . . . any job that calls for a blind clinch. By lightly pressing the handle you automatically drive a staple and turn its legs outward to clinch under or inside the work. Two models for light and medium staples. Call the Bostitch economy man in your area.

Fasten it better and faster with

For more information about the Bostitch T5 Tacker with outward clinch, write BOSTITCH, 644 Mechanic St., Westerly, R.I.

BOSTITCH
STAPLERS AND STAPLES

If you write maker identify as IEN - 4293

If you write maker identify as IEN - 4294

If you write maker identify as IEN - 4295

FOR close-knit strength and added life, here's a combination you just can't beat—Shenango *centrifugally* cast parts of Meehanite Metal. It is *double* assurance of finer, more uniform, pressure-dense metal, plus freedom from blow holes, sand inclusions and other defects!

So check with Shenango on your need for symmetrical or annular parts—semi-finished if you wish, or machined to your precise specifications in the modern Shenango shops. Get *all* the facts. Like others you'll probably find you can save time, money and trouble.

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

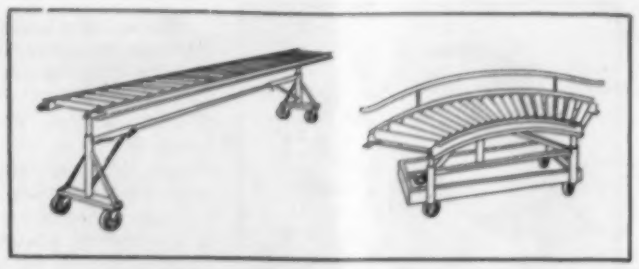
SHENANGO
ALL RED BRONZES · MANGANESE BRONZES · ALUMINUM BRONZES
MONEL METAL · NI-RESIST · MEEHANITE METAL

If you write maker identify as IEN - 4296

If you write maker identify as IEN - 4297

CONVEYING . . Roller sections available with steel or aluminum frame

Source: ARROW PRODUCTS INC.
417 Front Ave. N. W., Dept. IEN, Grand Rapids 4, Mich.



Specifications in Sales Manual pages 314 to 319

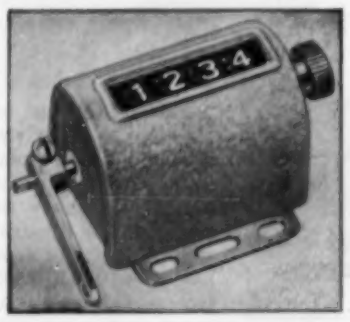
Steel rollers, 1½ in. in diameter, are mounted on grease packed ball bearings in a light weight steel frame, or in an aluminum frame, in two new lines of gravity roller conveyor sections under the trade names Arr-O-Roll, Jr. and Arr-O-Rolite. Straight sections are available in 5 and 10-ft. lengths and in 12 and 18-in. widths. Roller spacing is on 3 to 12 in. centers as required.

Curves are included, in 4-ft. radius, with 45 and 90-deg. angles, also in 12 and 18-in. widths. Supports are provided in six sizes for 12 to 80-in. heights. Load capacity of the 10 ft. section with a steel frame is 800 pounds. With an aluminum frame, it is 600 pounds.

If you write maker identify as IEN - 4298

COUNTING . . Four-wheel unit for built-in equipment application

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Dept. IEN, Chicago 6, Ill.



Hammerloid finish

White numbers appear on a black background back of the rectangular window in this new small reset stroke counter. It is known as the Junior King. It measures about 2 by 1¾ by 1½ inches. Mounting feet on both sides carry slotted openings. The wheels can be reset to zero by turning a knob. The operating arm adjusts to a required angle. Right or left hand design available.

If you write maker identify as IEN - 4299

Grill King Model S-5 is a new coin operated vending machine that holds 200 individually packaged sandwiches in five columns. Three are set up for delivery hot and two are cold. All are held in a refrigerated compartment until released by operating the coin mechanism. The cold sandwiches are delivered immediately through one opening. The hot sandwiches enter a high frequency cooking unit where they remain for 18 sec. and then are delivered through a second opening. The price of each selection can be set separately to sell for 10 to 60 cents in multiples of 5 cents. American Vending Corp., 12 E. Grand Ave., Dept. IEN, Chicago 11, Ill., is the manufacturer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4300

Address Correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 4301

If you write maker identify as IEN - 4302

If you write maker identify as IEN - 4304

Plasgon

makes tight joints

Use Cabot's Plasgon for sealing pipe joints and making emergency gaskets. Provides a quick, easy-made leak-proof seal which stays flexible. Unaffected by gas, glycol, oil, water, steam and all common solvents. Resists heat up to 350°F. and considerable pressure. Use right from tube. Put Plasgon in your maintenance men's kits.

Write Today for free sample tube of Plasgon, in black or white — state preference.

Samuel Cabot Inc.
433 Oliver Bldg. Boston 9, Mass.

If you write maker identify as IEN - 4305

OHIO KNIFE SLITTER KNIVES AND SHEAR BLADES are preferred by Metal Working Plants and Steel Warehouses

4 ways better . . . 1. Precision Cutting 2. Less Downtime 3. Less Regrinding 4. Longer Runs Between Grinds

here's why Ohio Knife Co. slitting and shearing knives earned this wide acceptance by reducing "downtime". Production savings are realized because Ohio Knives give longer runs, require less regrinding and deliver precision work even on the toughest jobs. OK Slitter Knives are made from the finest tool steel, precision ground to ± .0002 tolerances on thickness, diameter and bore—closer tolerances available if required. OK Shear Blades are specially heat treated to bring out best characteristics for different jobs, to give maximum toughness and keen edge-holding qualities.

Our engineering department is at your service for recommendations on your slitting and shearing problems. Write Dept. J.

Manufacturers of OK WELDED HIGH SPEED SHEAR BLADES • OK SOLID STEEL SHEAR BLADES • OK SLITTER KNIVES • ROTARY SHEARS, TUBE CUT-OFFS, HARDENED WAYS AND SLIDES

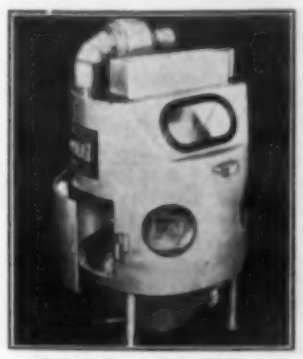
GO WITH OHIO GREEN

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as IEN - 4307

CLEANING . . Wet abrasive machine for use on dies, tools, work parts

Source: R. W. RENTON & COMPANY
877 Addison Road, Dept. IEN, Cleveland 3, Ohio



Operator directs nozzle

A bench model has been added to the line of wet abrasive cleaning machines previously described IEN-5451-53. It measures 24 in. in diameter, stands 43 in. in height and weighs 155 pounds. Liquid capacity is 2 gal. with abrasive capacity at 13 pounds. The exhaust blower, that keeps the interior clear, is driven by a 1/16-hp. 110-volt motor. One or two blast guns can be used with 28 to 42 cfm. at pressure of 85 to 100 pounds.

Liquid slurry is picked up by syphon action and is propelled from the blast nozzle inside the housing to perform abrasive finishing operations on work pieces positioned by the operator. The wet abrasive imparts a fine cleaning and polishing action, produces a matte surface.

If you write maker identify as IEN - 4308

CONDUCTOR . . Magnet wire silicone enameled for high temperature

Source: ANACONDA WIRE & CABLE CO.
1133 W. Western Ave., Dept. IEN, Muskegon, Mich.

Temperature to 132 deg. C.

The enamel, employed as the insulation on the company's new magnet wire, will not craze when exposed to solvents, or crack at temperatures to minus 65 deg. C. Dielectric strength is 1,500 volts per mil. Wire insulated with the new enamel is available in single and heavy grades in the same dimensions as those given in the company's general catalog for Formvar and nylon. The film can be removed by application of a chemical stripper. It has the appearance and feel of other synthetic resin insulated wires.

If you write maker identify as IEN - 4309

CAPACITOR . . Ceramic design for use in electronic filter circuits

Source: SPRAGUE ELECTRIC CO.
165 Marshall St., Dept. IEN, North Adams, Mass.

Bulletin 606A

Construction of this new line of high voltage ceramic capacitors includes molding in moisture resistant non-flammable thermosetting plastic. Fifteen terminal combinations are available to meet given mounting requirements in connection with application in the filter circuits of television receivers and cathode ray instruments requiring high voltage supplies.

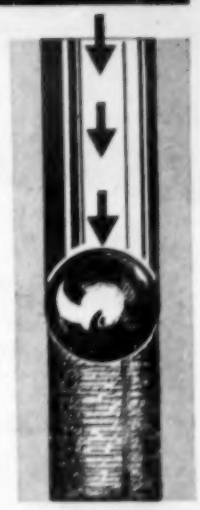
Rating is to 30 kv. dc. Standard capacitance is 500 mmf. Maximum operating temperature is 85 deg. C. Minimum insulation resistance, under standard test procedure at 25 deg. C., is 10,000 megohms.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4310

BALLIZING

For NEW Speed and Economy in Hole Sizing and Finishing



BALLIZING is a precision high-production process for sizing and finishing die-cast, drawn, and machined holes — simply by pressing a ball through the unfinished hole. With alloy steel and tungsten carbide balls available in practical quantities and in any size required, this process is used with holes of all diameters.

MAJOR ADVANTAGES:

FAST; takes only seconds. ACCURATE. FINE FINISH — burnished smooth. ECONOMICAL. Uses unskilled labor. No tool sharpening. No close adjustments. No special equipment.

FREE BALLIZING BULLETIN gives details; shows typical applications. May we send you a copy?

INDUSTRIAL TECTONICS, Inc. ANN ARBOR 2, MICH.

ITI PRECISION BALLS
All Materials — All Sizes
In Large or Small Quantities

If you write maker identify as IEN - 4311

MERRILL *MATERIALS HANDLING* DEVICES

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 4312

BARBER COLMAN

Impressor

for quick, on-the-spot hardness testing of non-ferrous metals and plastics

Simple to operate . . . gives an instant, dependable measure of hardness. Operates on principle of forcing a spring-loaded indenter into the surface with the amount of penetration registering on a dial indicator. Can be used in any position . . . tamperproof . . . compact . . . rugged, yet weighs only 12 oz. Thousands used by industry.

Write today for complete details.

BARBER-COLMAN COMPANY, Dept. D, 1216 Rock St., ROCKFORD, ILL.

If you write maker identify as IEN - 4313

FREE SAMPLE

- Makes and keeps belts soft and pliable
- Pliable belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- Only belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896

Cling-Surface Company, Inc.
1044 Niagara Street • Buffalo, New York
Please send me FREE sample can of Cling-Surface "50" Belt Preservative
Name .....
Title .....
Company .....
City ..... State .....

If you write maker identify as IEN - 4314

H & K Perforated Holes

Long ago, even before you used the knot-hole as your pass to the game, H & K perforated holes in unlimited sizes, shapes and patterns for industrial processing, for guarding and protecting, for grilles and for a thousand other purposes.

When specifications are difficult, involving heat and corrosion resisting materials, precision work, special layouts or large production, we invite you to consult our Engineering Department. "If it can be perforated, H & K can do it" is a reputation we aim to maintain. We have facilities for rolling, forming, shearing, welding and otherwise fabricating.

Ask for Catalog No. 62 for complete information.

The Harrington & King Perforating Co.

5637 Fillmore Street, Chicago 44, Ill.
114 Liberty Street, New York 6, N. Y.

If you write maker identify as IEN - 4315

Extra S-L-O-W MOTION Studies

Type 631-BL
STROBOTAC®: $150

All STROBOTACS are now equipped with a s-l-o-w speed range of 60 to 1,440 rpm, in addition to the standard 600 to 14,440 calibrated range.

STROBOTACS will stop motion or permit its slow speed analysis over the enormous range of 60 to 100,000 rpm!

The STROBOTAC is now even more useful in the design, manufacture, inspection, maintenance and sale of all types of machines and equipment.

For detailed information and suggestions of some of the hundreds of uses for the STROBOTAC and other G-R stroboscopes,

WRITE FOR THE NEW STROBOSCOPE BULLETIN

GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Massachusetts, U.S.A.

If you write maker identify as IEN - 4316

You Get A Tight Grip On Quality And Costs With Townsend Locknuts

Quality and costs are controlled firmly when you use Townsend locknuts in product assembly.

The Townsend Nylok Nut* on the left is cold forged to provide added strength in the body and threads. The locking element in the nut is a tough nylon plug insert in one hex face which projects beyond the crest of the thread. When the nut is run down on a bolt, the highly resilient nylon is compressed but not cut by the bolt threads. Its spring-like action sets up a counter-thrust, creating strong metal-to-metal wedging of bolt and nut threads. Nut locks in any position on the bolt—seating is unnecessary.

The Tufflok Nut* on the right has an exclusive petal design to assure staking of the hexagonal fibre insert. This provides a positive grip on the bolt at all times, since it cannot loosen or turn in its seat. Tufflok Nut* is an approved AN 365 part for use in aircraft. Both inserts resist moisture, dryness, gasoline and lubricants.

Townsend locknuts are available in sizes #4 through ⅜ inch. For information write today.

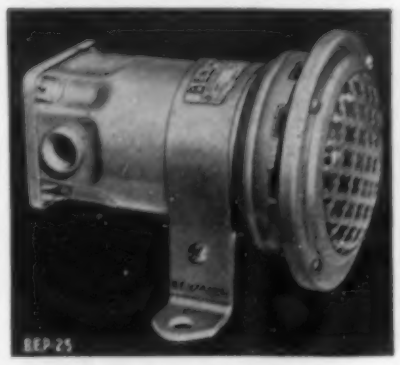
*Licensed under the Nylok Corporation patents.
Tufflok is a registered trademark of Townsend Company.

Townsend Company
NEW BRIGHTON, PENNSYLVANIA

If you write maker identify as IEN - 4317

SIGNALING . . Electric siren is driven by a 10,000 rpm. motor

Source: BENJAMIN ELECTRIC MFG. CO.
Dept. IEN, Des Plaines, Ill.



For fire and disaster

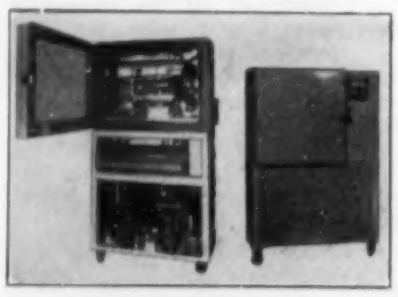
A warning signal is sounded by this new motor driven siren. It employs a ⅙-hp. motor assembled in a cast iron housing inside a sheet metal casing. The interior is sealed with rubber against the entrance of moisture. A ½-in. pipe bushing provides for connection to a ½-in. conduit. Ten rectangular ports in the steel casing permit expulsion of air.

The siren is designed for installation in multiple to cover comparatively small areas per unit as compared to a single siren to cover a large area. The assembly has been tested for operation indoors and outside over protracted periods and under adverse conditions.

If you write maker identify as IEN - 4318

TESTING . . Environment chamber ranges minus 120 to plus 500 deg. F.

Source: CONRAD INCORPORATED
52 W. 4th St., Dept. IEN, Holland, Mich.



Caster mounted

New liquid chiller, to the left in the illustration, and a dry chamber machine, to the right, have been added to the company's line of environment testing equipment. The former ranges from minus 120 to plus 500 deg. F. The latter is from minus 120 to plus 250 deg. F. The dry chamber equipment is available with work chambers rating 1 to 64 cubic feet. The portable assemblies have heat removal capacity of 300 to 50,000 btu. per hour.

The cooling equipment is cascade type with semi-sealed refrigeration units employing Freon 13 or 22, neither of which is toxic. Controls, instruments, recording equipment are subject to specification.

If you write maker identify as IEN - 4319

Flexible transparent plastic panes that will bow and pull away from a window casing for quick pressure release in the event of an explosion are now available from General Plastics Co., Dept. IEN, Marion, Ind. The panes are made of extruded Tenite. They are cut to size from the extruded sheet and thin galvanized strips are crimped over the four edges to make a metal binding ⅝ in. in width. This binding adds rigidity and assists in glazing. The panes are installed the same as glass. They will not shatter.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4320

ELECTRO SNAP

STANDARD Snap-Action

BASIC SWITCH

MECHANICAL LIFE SPAN OVER 10,000,000 OPERATIONS

Cut-Away View of Type S2

Here's the Precision Switch that Gives You Extra Features at No Extra Cost

- ***LONG MECHANICAL LIFE***
  Carries life rating of 10,000,000 mechanical operations with precise repeatability of entire life of switch.
- ***HIGH CAPACITY***
  UL rated at 10 amps, 125/250 v. ac or 30 v. dc. Wiping action of contacts reduces arcing for long electrical life.
- ***SMALL SIZE***
  Durable plastic case measures only 1¼" long, ½" wide and ½" high, permitting more compact designs and mounting arrangements.

Send for details in Specification Sheet STK-4

see our catalog in S PRODUCT DESIGN FILE or write for copy

ELECTRO-SNAP SWITCH AND MFG. CO.
4224 West Lake Street, Chicago 24, Illinois

If you write maker identify as IEN - 4321

SKINNER V2 STAINLESS STEEL SOLENOID TWO-WAY CUT-OFF VALVES

. . . for Air, Water, Inert Gases, Oils & Other Media

Miniature Skinner V2 Stainless Steel Valves are competitively priced, yet skillfully engineered to highest quality standards. Stainless steel internal parts, leakproof operation, and direct mounting make them ideal for a wide range of applications.

V2 Valves are small (weigh 9 ozs.), yet give performance measured in millions of cycles. They feature "fail-proof", bubble-tight shut-off: pressure and spring combine to snap valves to normal position at the instant current goes off.

SPECIFICATIONS: Type: Two-Way, Normally Open or Normally Closed; Pressure Range: 0-250 PSI; Orifice Diameter: 3/64" to ⅛"; Pipe Size: ⅛" or ¼" NPT; Voltage: All common AC, DC voltages. *Write for Bulletin 534.*

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY

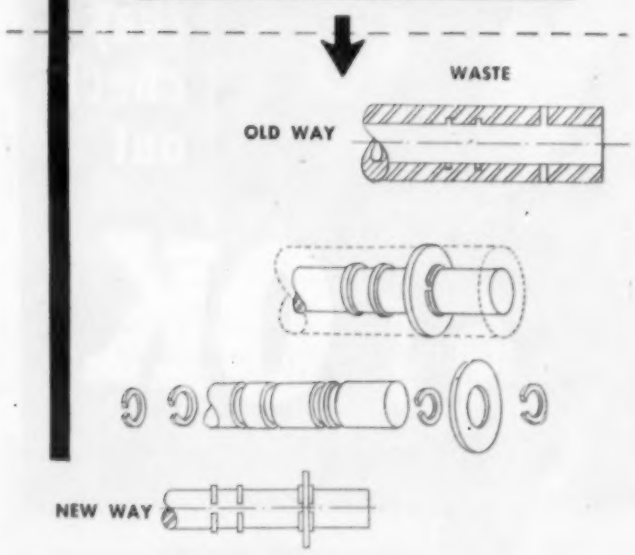
110 Edgewood Ave., New Britain, Conn.

If you write maker identify as IEN - 4322

Examine the design of your products and machines...

No doubt you too can save time—save materials—and increase your profits by using

NATIONAL RETAINING RINGS



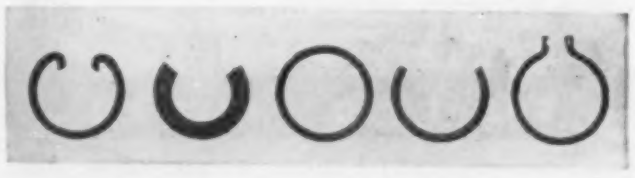
There are literally thousands of places where retaining rings will *save*, ranging from simple applications on tools, toys, small parts and gadgets to complicated heavy duty engines, large drill presses, etc., etc.

And in addition to this economy, they *improve* your products. It is wasteful to cut down shafts to make shoulders. Redesign to groove *smaller* shafts and housings and use these high-grade steel rings.

Let our engineers consult with you. Send today for folders.

Don't pass up this opportunity to increase profits.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN, U. S. A.



If you write maker identify as IEN-4324

A RUSSIAN JUST INVENTED—

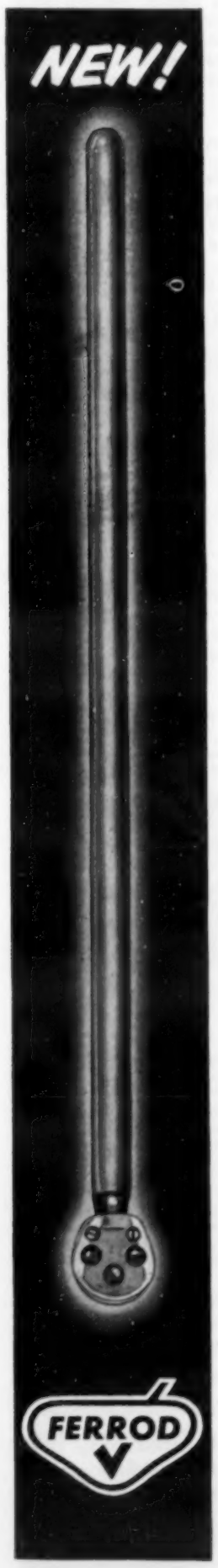
. . . an amazing, inexpensive new material! It can be heat resistant or heat absorbing or heat insulating; electrically conductive or non-conductive; patterned or plain, flat or curved or wavy; translucent or transparent or opaque!

Think what *you* can do with such a material—think how you can use it in your products or production process.

The material is *glass*. Of course Russia didn't "invent" it. L·O·F didn't "invent" it either, but has led the industry in new developments and improvements. L·O·F *makes* all kinds of glass to do all kinds of things and we have a hatful of ideas that might help you save money. Write today for your free 1954 edition of *L·O·F Glass for Product and Engineering Design*. Ask for SPD-54. Libbey·Owens·Ford Glass Company, 9244 Nicholas Bldg., Toledo 3, Ohio.

LIBBEY·OWENS·FORD GLASS COMPANY

If you write maker identify as IEN-4325



NEW!

DIFFERENT!

FERROD'S NEW

MONOSTRIP®

ELECTRIC HEATERS

Here are some *rod-type* units that can really take it! Highly corrosion resistant and operating at sheath temperatures up to 1500° F, these single terminal heaters are built like a steel girder to hold their shape and desired position.

•

As in other Ferrod *rod-type* heaters, the nickel-chromium resistor elements are precisely located, insulated with magnesium oxide, then flattened under tremendous pressure—forming a broad, flat heating surface with a reinforcing "spine" up the back.

•

Inconel-sheathed for long life, they are available in over-all lengths from 12" to 48" and in wattages from 350 to 2500.

•

Width of rod is ⅝" on flat side. Depth is ⅜". Heated area is normally 3" shorter than over-all length. Terminal shown is standard, but other types are available at nominal cost.

•

For further details and complete specifications on standard units quickly available, write

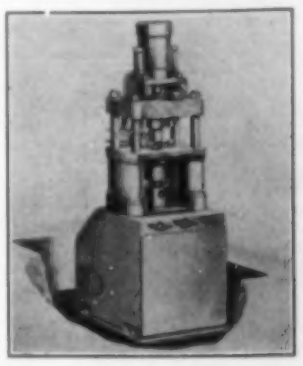
FERROD MFG. CO.
606 N. River St.
Batavia, Illinois

Subsidiary Corporation

If you write maker identify as IEN-4327

PRESS . . Motor-driven crank type hydraulic control, to compress powders

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Dept. IEN, Philadelphia 42, Pa.



Bulletin 3104

Model L, with 50-ton capacity, is a new unit in the company's line of powdered metal compacting presses, previously described IEN-10969-53. The machine is a four-column crank type unit equipped with a flywheel, pneumatic clutch and brake and driven by a 10-hp. motor. The motor and press mechanism are enclosed to prevent entrance of abrasive materials.

Pressure control is by means of a hydraulic head in which a ram supplies opposing pressure to the upper punch so the press cannot be overloaded. Adjustments for the independent floating die holder and floating core rod, as well as for the depth of fill and stroke of the bottom punch, are adjusted by turning cranks in connection with counters that read the adjustments directly.

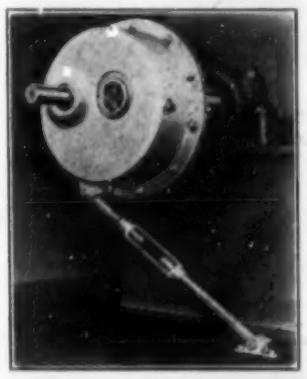
The press can be set up for continuous operation, continuous operation with a dwell interval, single stroke to stop at any predetermined point and to restart when the operator presses a button, single stroke with dwell and inching control for set-up operations.

Die float is adjustable to 2 inches. Depth of fill and ejection stroke are to 4 inches. Die opening is maximum at 7 inches. Standard 3-in. opening in the feeder can be increased to 6 in. to specification. The press will make 8 to 32 strokes per min. by adjusting its variable speed transmission. Floor space measures about 5½ by 7 feet.

If you write maker identify as IEN-4328

DRIVE . . Speed reducer mounts on shaft of a driven machine

Source: FALK CORPORATION
3001 W. Canal St., Dept. IEN, Milwaukee 8, Wis.



All steel design

Helical gears, made of steel, operate in oil inside the housing of this new Type-J speed reducer. The gear shafts are mounted in ball or roller bearings carried in steel bearing plates which take the load independent of the housing. The latter acts only as an oil reservoir. The reducer mounts on the input shaft of a machine and carries a suitable sheave on its own input shaft for connection to a motor. It is prevented from rotating with the machine by a turnbuckle equipped tie rod. The turnbuckle can be adjusted to set a desired belt tension.

The reducer is available in single and double reduction assemblies for output speed between 14 and 420 rpm., any given speed being selected by means of sheaves that are available within the allowable limits. Six reducer sizes cover a range from ½ to 30 hp.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-4329

how to SOLVE your LOW-CAPACITY FLOW CONTROL problems

BULLETIN 1053

Here's a new and improved bulletin on Air-Powered Controlled Volume Pumps . . . your guide to precise flow rate control of low-capacity chemical and slurry streams.

It's fact-filled . . . gives you operating principles, tables, applications, features and designs, examples of complete Milton Roy engineered chemical feed systems.

Solve your low-capacity flow control problems. Send for your free copy of Bulletin 1053, now.

MILTON Roy COMPANY
1302 E. MERMAID LANE
PHILA. 18, PA.

CONTROLLED VOLUME PUMPS ARE FLOW CONTROL INSTRUMENTS

If you write maker identify as IEN-4330

. . . . WHAT'S NEW AT BRISTOL . . . .

CONTINUOUS STANDARDIZATION with no dry cells

. . . in Bristol Electronic Dynamaster Potentiometers and Pyrometers

• **CONTINUOUS STANDARDIZATION** eliminates need for dry cells—supplies voltage that is continuously compared with standard cell.

• **CONTINUOUS OPERATION—NO TIME OUT.** With continuous standardization, the potentiometer is free to continuously measure, record, and control. No time out or interruption is required for periodic standardization.

• **NO STANDARDIZING MECHANISM.** Continuous standardization is taken care of electrically. There is no standardizing mechanism.

For the complete story on the modern Bristol Dynamaster, write for free 35-page booklet P1245. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn. 3.19

BRISTOL *THE DEPENDABLE GUIDEPOST OF INDUSTRY*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN-4331

NOW! AN IMPROVED LOW COST CASTER with Hardened Raceways Unbreakable Fork and Top Plate

SERVICE PRESSWELD CASTERS

STRONG! AGILE! QUIET!

Here, at last, is a truly efficient, light-weight caster in the low-cost field. Ideal for Dollies, Racks, Box Trucks and similar applications in the moderate capacity range. Many features usually found only in high price casters provide for years of trouble-free performance. Get PressWelds—and get SERVICE quality at low cost.

Write for sizes, capacities and low prices

SERVICE CASTER & TRUCK CORP.
Executive Offices: Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.

See your Classified Telephone Directory for Nearest Distributor

If you write maker identify as IEN-4332

FOR MEDIUM AMOUNTS OF AIR *CONSTANTLY!*

JOY WG-9

COMPRESSOR

Water-cooled, double-acting, single-stage. Replaceable crosshead guides and cylinder liners. Force-feed lubrication, bearings that *never* need adjusting. "Dual Cushion" valves for higher capacity and better heat dissipation. The WG-9 is a real performer—best in its class.

15 SIZES • 30 to 150 PSI
172 to 881 CFM

SPACE-SAVER VERTICAL DESIGN

WRITE FOR BULLETIN

Consult a Joy Engineer

JOY

JOY MANUFACTURING CO., OLIVER BLDG., PITTSBURGH 22, PA.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED, GALT, ONTARIO.

If you write maker identify as IEN - 4333

Reconditioned building.

After the fire.

Building wins "Trial by Fire"

A 45-minute fire, fed by solvents and auto tires, raged within this Armco Steel Building. Yet the owner was able to make the building serviceable and presentable without replacing any Armco STEELOX Building parts.

All-steel Armco Buildings are noncombustible and weather-tight. There is nothing to crack, warp or rot. No previous experience is necessary for easy, fast erection.

Use economical Armco Buildings for warehouses, shops, offices and other industrial needs. Sites can be permanent or temporary. Ask us how these buildings can save money.

ARMCO DRAINAGE & METAL PRODUCTS, INC.
2614 Curtis Street • Middletown, Ohio

If you write maker identify as IEN - 4334

Developed for surface finishing small hand tools, machine is equipped for mechanical holding or magnetic chuck, operated by an electro-hydraulic system.

Spindle of single roll will accommodate buffs from 3" to 12" in dia. Work area with mechanical holding fixtures is 38" x 24"; with magnetic chuck, 38" x 14".

Write for Bulletin 206

CLAIR
MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

If you write maker identify as IEN - 4335

fabricated from **POLYPENCO**® / nylon shapes

Immediate delivery of POLYPENCO nylon rod, tubing, strip and slab. We'll help you fabricate.

- Make one part or hundreds economically on standard metalworking tools
- Reduce wear on gears, bearings, gaskets, cam followers, etc.
- Eliminate lubrication
- Eliminate corrosion on exposed surfaces
- Eliminate backlash and noise
- Get top performance in every part with quality-controlled Polypenco nylon shapes

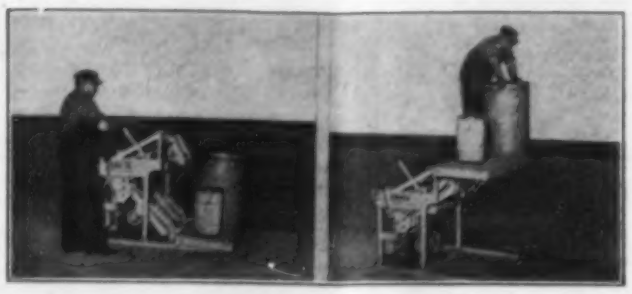
POLYPENCO NYLON WRITE FOR GENERAL BULLETIN

nylon and Teflon*—other non-metallic/stock shapes
finished part: also available to your specifications
The POLYMER CORPORATION of Penna. • Reading, Penna.
*trademark for Du Pont tetrafluoroethylene resin

If you write maker identify as IEN - 4336

ELEVATOR . . Portable electric raises 1 or 2 ton load to 60 inches

Source: CEMCO INDUSTRIES INC.
Dept. IEN, Galion, Ohio



Designed for utility applications

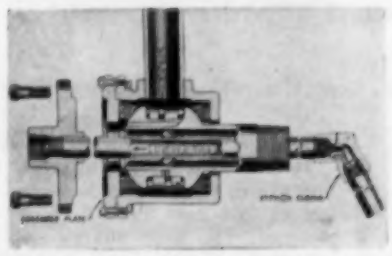
Illustrated is new assembly of the company's hydraulic truck tail gate with a motor drive and structural base to serve as a load elevator. The base can be equipped with wheels for hand movement from one location to another or it can be picked up with a truck when a new location is required. The load platform measures 84 in. in width and is available in standard construction at 27 or 36-in. from front to back.

The power stand measures 52 in. in width by 45 in. in length. The platform rests 6 in. above the floor in lowered position. Overall length in lowered position is about 84 inches. It can be raised or lowered and held in any location. The platform can be equipped with boxes, railings or special designs to meet a given requirement. The motor is for 110-volt 60-cycle ac.

If you write maker identify as IEN - 4337

PIPE FITTING . . Rotary joint to make stationary-rotating connection

Source: JOHNSON CORPORATION
805 Wood St., Dept. IEN, Three Rivers, Mich.



Assembles quickly

Type JSP designates new design of the company's Type-J rotary pressure joint that includes a stationary syphon pipe to remove condensate from the interior of a rotating vessel as well as to deliver steam. The new design employs an assembly plate that mounts between the joint body and the cover plate so the syphon pipe can be withdrawn without taking the joint apart.

On the right hand side is a hinged syphon elbow into which two straight lengths of syphon pipe can be threaded to eliminate the need for a curved pipe to reach into the vessel. As the first pipe is inserted, its weight closes the elbow to create a closed line that is leak and pressure proof.

The new design is available with connecting nipple sizes ranging from ½ to 5 in. in joints suitable for 150-lb. pressure. Sizes in the line for through flow range from 3⅛ to 11¼ in. in length and from about 2½ to 13 in. in height. Sizes of the syphon pipe design range from 3⅝ to 13¼ in. in length and about 2½ to 13 in. in height. The new Type JSP is available in sizes from 1 to 3 in. and for 250 lb. pressure. The new Type J is available with connecting nipple sizes ranging from ¾ to 3 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4338

Use LUFKIN MITI-MITE

Magnetic Base Tools

Light exactly where you need it.

Compactly designed portable De-magnetizer can be used in hard-to-reach places.

Six basic Miti-Mite tools with hundreds of shop applications include Indicator Holders in 2 sizes, Handi-Lites in two sizes, a 4-Power Magnifier and a Portable De-magnetizer. Permanent magnets in bases attach instantly to any round or flat iron or steel surface. All are engineered for accuracy and long life.

Ask your distributor for a demonstration, or write for more information.

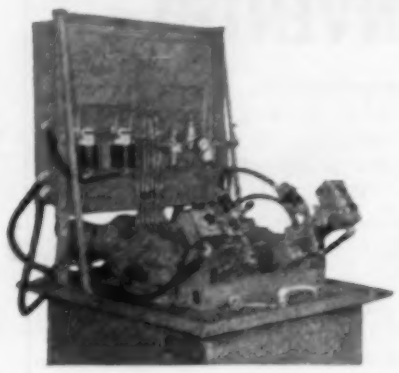
302

BUY LUFKIN
TAPES - RULES - PRECISION TOOLS
FROM YOUR DISTRIBUTOR
THE LUFKIN RULE CO., Saginaw, Mich.
132-138 Lafayette St., New York City
Barrie, Ontario

If you write maker identify as IEN - 4339

DRILLING . . Multi-spindle machine to drill both right and left hand work

Source: GOVRO NELSON COMPANY
1933 Antoinette, Dept. IEN, Detroit 8, Mich.



Built to order

Four of the company's automatic drilling heads are assembled in this new multiple spindle machine. The heads drill two holes for 1/4-20 threads in right hand and left hand automobile door handles in one operation at the rate of about 600 parts, 1,200 holes, per hour. The operator loads one each of right and left hand parts. Then he depresses the start buttons with both hands to start the cycle. It includes clamping, drilling, releasing and ejecting.

If you write maker identify as IEN - 4340

CLEANING . . Wiping cloths made of washable non-woven fabric

Source: WILSON WIPING CLOTH CO.
2286 Smead Ave., Dept. IEN, Toledo 6, Ohio

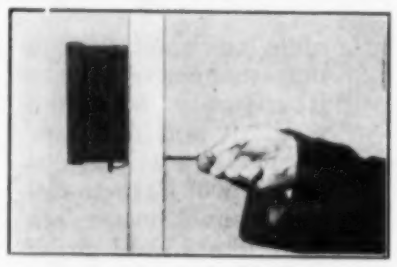
Price data upon request

Wilson Wipes is a new non-woven material consisting of a mat of fibers held together with a plastic bonding material. The fabric is lint free and is supplied in two sizes measuring 12 by 14 in. and 12 by 18 inches. Both are packaged in convenient quantities. Both can be washed and used again although they are economical to use once prior to disposal.

If you write maker identify as IEN - 4341

TIMING . . Watchman's clock operated from outside by pull lever

Source: DETEX WATCHCLOCK CORP.
76 Varick St., Dept. IEN, New York 13, N. Y.



"He was there"

Safe-T-Chek is a new spring-driven circular chart watchman's clock that mounts on the inside surface of a door or wall. A pull lever extends to the outside so a watchman, making his rounds in a neighborhood, can register his visit. A detector device in the clock assembly reveals any attempt at tampering.

The clock is enclosed in a crackle finish metal housing measuring 6½ by 3 by 6½ inches. It is fitted with an 8-day movement and a 7-day record dial. A winding key and a year's supply of dials are standard equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4342

Penmetal 1869

EXPANDED METAL MESH
makes a little metal go a long way

FOR PARTITIONS • PANELS
GUARDS • SHELVING
ENCLOSURES • GRILLES
REINFORCING • SCREENS

Penmetal Expanded Metal is sheet metal—slit, then stretched up to 10x original area. No "scrap", no waste.

Penmetal Expanded Metal weighs far less—up to 90% less than solid sheets.

"Diamond" truss pattern adds extra strength, extra rigidity. Even so, sheets can be cut, bent, curved, flared . . . also welded, brazed, soldered . . . can be used plain, galvanized, tinned, polished, painted or enameled.

Available in carbon steel and stainless—copper—brass—aluminum—monel—inconel . . . large or small mesh . . . light or heavy gauge.

For more information, write for free Bulletin EM-42.

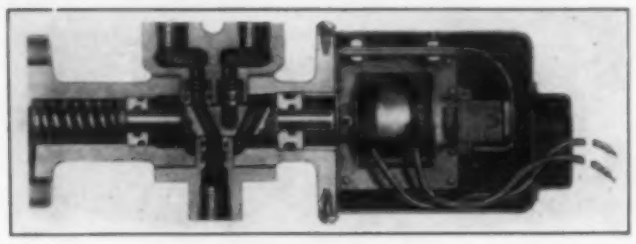
PENN METAL COMPANY, INC.
General Sales Offices:
205 E. 42nd St., New York 17, N. Y.

BOSTON, PHILADELPHIA, WASHINGTON, PARKERSBURG, W. VA., DETROIT, CHICAGO, DALLAS, LOS ANGELES, SAN FRANCISCO, SEATTLE

If you write maker identify as IEN - 4343

VALVE . . Solenoid operated, 2, 3, 4-way, oil pressure to 250 pounds

Source: BARKSDALE VALVES
5125 Alcoa Ave., Dept. IEN, Los Angeles 58, Calif.



Self-lapping action

Three sizes in this new assembly of Shear-Seal hydraulic operating valve and a solenoid are available for ¼, ⅜ and ½-in. pipe connections. The solenoid acts against a return spring as shown in the sectional view.

The valve employs spring backed insert seats that hold contact with the ported stem and provide a wiping action that keeps the operating parts clean. Any wear that occurs is taken up by the springs so the valve remains "tight."

If you write maker identify as IEN - 4344

PLASTIC . . Saran tube 1½ in. id., 2⅝ in. od., to 3 feet

Source: PYRAMID PLASTICS INC.
554 W. Polk St., Dept. IEN, Chicago 7, Ill.

Corrosion resistant

The company announces availability of a heavy wall Saran extruded tube with physical and chemical properties comparable to standard Saran tube of usual wall thickness. The wall in this case measures 9/16 inches. The tube can be machined and fabricated by welding. It is resilient and will machined and fabricated by welding. It is resilient, tough, abrasion and vibration resistant.

If you write maker identify as IEN - 4345

SWITCH . . Snap acting design to control, interlock, limit, protect

Source: ELECTRO-SNAP SWITCH & MFG. CO.
4220 W. Lake St., Dept. IEN, Chicago 24, Ill.

Cut-away view

Rating is 10 amp. on 110/220-volt ac. for this new silver contact double-break snap acting switch. It is available in 24 models that include 8 reset units in single-pole, single-throw or double-throw, normally open or closed assemblies. The housing can be specified die cast, splash proof, general purpose, hermetically sealed.

The mechanism can be employed without the metal housing for installations where it is not exposed to dirt, dust or lubricants. Snap action is independent of the speed of actuation. The self-aligning springs provide wiping action. The plastic housing measures 1¼ by ½ by ½ inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4347

CLEANING . . Washing machine for small parts, instrument mechanisms

Source: L & R MFG. CO.
577 Elm St., Dept. IEN, Arlington, N. J.

Mounts on a table

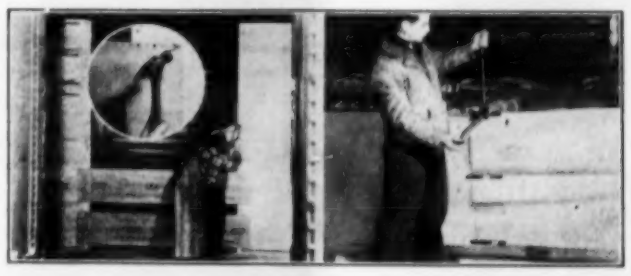
Small pieces, complete instrument mechanisms, watch movements that require cleaning, are placed in a Monel Metal work basket measuring 5½ by 3⅛ in. in this recently improved washing machine. The basket is suspended from a small universal gear head motor equipped with reversing control. The basket and motor are supported by a spring on a central shaft so the work basket can be raised and lowered into each of four enclosures or containers. Three of these containers are 1½-gal. glass jars to hold cleaning and rinsing solutions. One is a metal enclosure equipped with an electric heating element and served by a separate motor-driven blower for final work drying.

Improved construction, over the machine previously described IEN-6941-51, includes thermostatic control for the drying chamber, tempered glass jars for the washing and rinsing stations, splash pans that keep spilled solutions away from the wiring in the machine base. The work basket takes triple small removable nesting baskets to segregate small parts. Dimensions are 17¼ by 16½ by 23 inches. List price, with cleaning and rinsing solutions, is $262.50.

If you write maker identify as IEN - 4348

STRAPPING . . Car door strips to replace lumber and load blocking

Source: SIGNODE STEEL STRAPPING CO.
2611 N. Western Ave., Dept. IEN, Chicago 47, Ill.

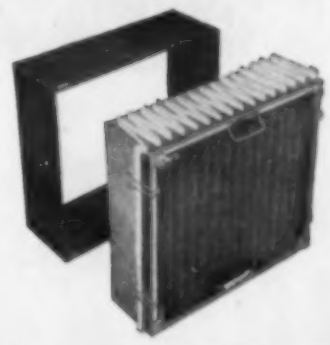


Illustrated in Bulletin, "Retaining Strips"

Waterproofed Kraft paper is laminated over two bands of steel strapping to produce a strip measuring 18 in. in width by 88 or 108 in. in length in this new design of car door strip, previously described IEN-19-48. The strip is applied on the "far" door opening of a box car, as shown to the left in the illustration, by driving nails through visible nail holes. The outer ends of shorter strips are similarly positioned on the "near" door and the ends of these strips, which meet in the middle of the opening, are left unattached until the car is loaded. Finally these strips are tensioned and secured as shown to the right in the illustration. No application skill is required. The strips fit without need to saw or shape.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4350



Airmat PL-24

BETTER BUILT . . . FOR LONGER LIFE

Here's a filter that is really designed for hard usage and long, trouble-free life. The AIRMAT PL-24 is also built for easy maintenance. The precision-made components fit without binding—and separate easily for changing media. There are more than a quarter million AIRMAT PL-24 units now in service—evidence of real dependability! The PL-24 provides a maximum filtering area (7 to 1 ratio) with *positive* sealing against air leakage. Please write for Bulletin No. 230E.

AAF American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN - 4351

REALOCK FENCE

keeps your guard up

With a Realock Fence enclosing your buildings and grounds, your guard is always up against the risks of unauthorized entry.

Consult your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate or catalog.

BRANCHES IN ALL KEY CITIES
THE COLORADO FUEL AND IRON CORPORATION • Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION • Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
CF&I

If you write maker identify as IEN - 4346

Metal hose variety!

Consult PACKLESS on your flexible metal hose requirements — a complete line stocked for every industrial need — Bronze, Stainless steel and Carbon steel available for high or low temperature usage. Fittings are soldered, brazed, welded, or mechanically applied. Write for industrial folder.

PACKLESS METAL HOSE INC.
31-40 WINTHROP AVE. • NEW ROCHELLE, N. Y.

If you write maker identify as IEN - 4349

FULLY AUTOMATIC LOADER!

LOAD-O-MATIC*

The LOAD-O-MATIC* is a new, revolutionary loading platform which automatically carries loads from loading dock to truck floor, whether truck is above or below dock. Can also be installed at ground level. Motion controlled by switch bar in platform and by self-leveling ramp. Completely automatic! Human element eliminated! It's the loader with the mechanical brain. Models 6000 to 20,000 lbs. Write for descriptive literature. *Pat. App. for

FIELD ENGINEERING CO. 66 FOOTE AVENUE JAMESTOWN, N. Y.

If you write maker identify as IEN - 4352

Backstand belts triple production!

Send for Armour's free booklet to learn this amazing method!

Metal polishing has hit a new production high with backstand belts. They cut faster, cooler than set-up wheels—and cut down on the number of operations. In some plants, backstand belts have *tripled* production! To learn more about this modern method, send for Armour's free booklet, "Backstand-Belt Polishing."

Mail this coupon today

Please send booklet "Backstand-Belt Polishing"

Name ..... *Title* .....
Company .....
Address .....
City ..... *Zone* ..... *State* .....

ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 4353

JOHNSON BAND SAWS

SPECIFICATIONS—MODEL B

Capacity—5" rounds, 10" flats.
Height Overall—(Closed)—32".
Blade Length—7'5" x ½" x 23 ga.
Floor Space—46" x 28".
Weight—(Uncrated) 235 lbs. Crated 280 lbs. Boxed for Export 400 lbs.
Wheel Diameters—10"
Motor—½ H.P. any voltage available.
Speeds—45, 90 and 150 ft. per min.
Casters—Optional at slight extra cost.

MODEL J, 10" X 18" CAPACITY ALSO AVAILABLE
WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 4354

NEW Ejectopump

COMPRESSED AIR OPERATED

for ABRASIVE and INFLAMMABLE LIQUIDS and SEMISOLIDS

Requires no lubrication

NO GLANDS
NO BEARINGS
NO MOVING PARTS

Now available for the first time in the U. S. Especially suitable for handling latex, bitumen, paint, chocolate, fruits and vegetables suspended in water, pottery slip, carborundum slurries, and various chemicals. Will not cause aeration or coagulation of materials. Available in 1½", 2", 3", 4" and 6" sizes.

Write today for complete details.

FERRO

FERRO CORPORATION
Supplies Division
4180 EAST 56th STREET • CLEVELAND 5, OHIO

If you write maker identify as IEN - 4355

How to check DOWNTIME!

NOW, you can see, right in your office Every time a machine STANDS IDLE—and how long!

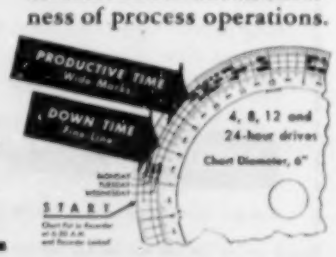
with electrical Model M SERVIS RECORDER

The Servis Recorder Chart (sample portion below) instantly shows all stops and delays. So you can reduce downtime, increase production and thus repay the cost of Servis Recorders *many times over!* . . . Also valuable in time studies to set rates and to check exactness of process operations.

FEATURES OF NEW MODEL M
• Visible, electrical recording • Location anywhere, distant from machines • No ink, no pen to obscure chart • Far lower cost than comparable devices.

WRITE FOR "MODEL M" FOLDER

THE SERVICE RECORDER CO.
1375B Euclid Avenue
Cleveland 15, Ohio



If you write maker identify as IEN - 4356

NAILING . . Motor-driven machine for nails, pins, rivets to 1¼ inches

Source: PRESS WIRELESS LABORATORIES INC.
25 Prospect Place, Dept. IEN, West Newton 65, Mass.

For wood, plastics

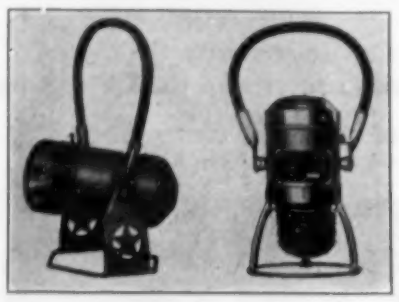
Push action, rather than impact, is imparted to a magazine fed nail, pin or rivet by this new crank design Model-C nailing machine. Sufficient power is developed by the ¼-hp. motor and the flywheel equipped crank to drive a ¾-in. No. 18 nail into solid lead and bury the head flush with the surface without previous punching. At the same time, the power is controlled so the machine can assemble fragile products with little danger of splitting or cracking.

Operation centers at a foot treadle. The work is positioned by the operator on a table that can be raised and lowered and set square or at an angle so the driving action can be partial, flush or countersunk. The table surface carries a diamond pattern that prevents the work from skidding. Five models in the line have throat depth ranging from 6 to 10½ inches. List price ranges from $475 to $800.

If you write maker identify as IEN - 4357

LIGHTING . . Electric lanterns for illuminating and signaling uses

Source: STAR HEADLIGHT & LANTERN CO.
West Main & Jacobs, Honeoye Falls, N. Y.



Weatherproof

Model 179N spotlight, to the left in the illustration, and Model 204N signaling lantern, to the right, are now offered for general use in the industrial field, following their introduction some time ago for commercial and railroad applications. The body swivels in the stand in Model 179N to hold in any set position. Both lanterns employ 6-volt batteries.

A toggle switch turns the spotlight on and off. The circuit is closed to either of two lamps in the signaling unit by turning the body of the lantern on the guard type base. This arrangement maintains a warning signal in the event that one of the two lamps burns out. This signal can be either red, yellow, blue or clear depending on the specified fresnel globe. List prices are $6.50 and about $8 without the battery.

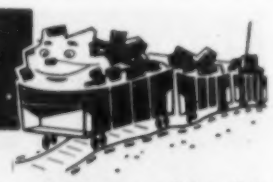
If you write maker identify as IEN - 4358

Clark Equipment Co., Dept. IEN, Battle Creek 49, Mich., can supply you with an electric Carloader fork truck, approved by Underwriters' Laboratories, Inc., for operation in hazardous areas Class I, Group D. The truck is available in 1½ to 2½ ton capacities. It is explosion proof.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4359

The case of the distressed coal...



Recently we had a case like this in a Pittsburgh steel mill. Their coal was happy as a clam, just sitting back contentedly in the railroad hopper cars, refusing to budge.

The plant superintendent was hopping mad until we came to the rescue with a CLEVELAND vibrator.

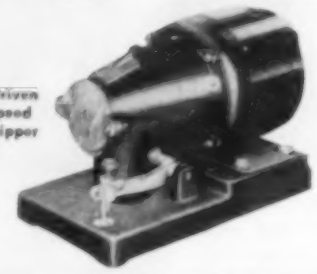
The coal was distressed at being jolted into action. It *had* to move right along with production . . . and now the *superintendent* is happy as a clam.

Tell us your materials handling problem, or ask for our detailed literature.

THE CLEVELAND VIBRATOR CO.
2736 Clinton Ave. • Cleveland 13, Ohio

If you write maker identify as IEN - 4360

Over 3,000 Strips Per Hour with HIGH SPEED WIRE STRIPPERS



Motor Driven High Speed Wire Stripper

Completely removes any type of insulation (including new plastic types) from solid, strand or multi-conductor cable up to ½" diameter. Stripping lengths up to 1½". Works instantly . . . easy to use . . . simple to adjust. Three exclusive circular cutters center cable for accuracy and give more and sharper cutting edge. Comes with ¼ H.P. 110-volt single phase AC motor, cord, switch and plug. Cut production costs with HIGH SPEED.

Costs only $132.50 F.O.B. Rochester, N. Y.

Write for detailed illustrated free literature on lower cost production wire stripping.

HIGH SPEED HAMMER CO., INC.

Manufacturers of HIGH SPEED Wire Strippers, Cold Riveters, Staking Machines and Precision Drilling Machines.

316 E. NORTON ST., ROCHESTER 21, N. Y.

If you write maker identify as IEN - 4361

BULKY, AWKWARD, HEAVY LOADS *Handled*

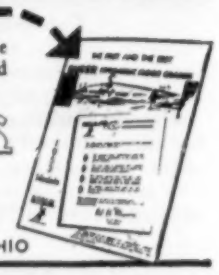
• EASILY
• SAFELY
• QUICKLY
for LESS

2 TON CAPACITY

SUBSTITUTE FOR AN ELEPHANT

GET THIS BOOK

Gives all the facts about Ruger's complete line of hydraulic floor and truck mounted cranes, capacities 1000 to 6000 lbs.



RUGER CRANES

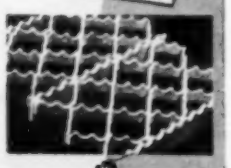
613 West Fourth St. UHRICHSVILLE, OHIO

If you write maker identify as IEN - 4362

Compare This Positive Footing Multi-Feature "Safety Grating"

CUTS DOWN ACCIDENTS ELIMINATES DANGER SPOTS IMPROVES EFFICIENCY

Bustin
FIRM-GRIP
SAFETY GRATING



Help Yourself in your effort to eliminate skidding accidents.

Try BUSTIN FIRM-GRIP.

This recently developed unique "Safety Grating" has proven to safety engineers of major industrial concerns across the continent its unusual value in eliminating accidents.

Absolute positive footing even when completely submerged in grease.

*Pat. Pending

Bustin

Write for Complete Literature
FIRM-GRIP GRATING CORP.
Dover, New Jersey Dover 6-8800

"BUSTIN—Designers and Manufacturers of Metal Products Since 1928"

If you write maker identify as IEN - 4363

NYLOK'S Self-locking THREADED INSERTS

● For use principally in non-ferrous forgings, castings and extrusions

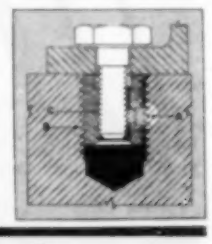
CUT COSTS because NYLOK threaded inserts eliminate counterboring, special tapping and all of the secondary operations required by other threaded inserts. With NYLOK inserts, simply drill and tap with standard tools — then screw the insert in place. They give stronger, tighter fastenings which will permit fewer fastenings per application.

PROTECT PARTS because they eliminate thread failure in expensive castings by absorbing stresses and prevent thread wear and stripping.

DOUBLE LOCK because with the resilient nylon plug, NYLOK inserts provide a smooth, positive locking torque on both internal and external threads, thus locking the insert in the casting and also securely locking the bolt once it has been threaded into the insert.

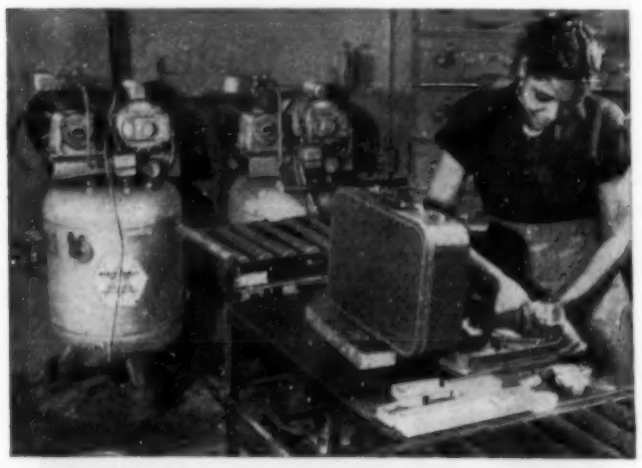
REQUIRE NO SPECIAL TOOLS for insertion or removal. Permits use of standard screw driver. Simplifies maintenance in the field.

● HOW NYLOK THREADED INSERTS WORK . . .
Resilient nylon plug (A) sets up lateral thrust on both internal and external threads, smoothly wedging mating threads together, both on casting and bolt (B) and (C). There is no galling, no thread distortion, no mutilation of mating threads. All of locking action is on threads and locking is positive. The inserts may be used and reused many times without impairing the locking feature.



THE **NYLOK** Corporation
Manufacturers of Nylon-locked fasteners covered by U. S. patents and patents pending
Offices in: New York City, Detroit, Chicago, North Hollywood
Main Offices and Factory — Elmira Heights, N. Y.

If you write maker identify as IEN - 4364



At the Baltimore Luggage Company they keep production flowing smoothly with an "On-the-Spot" AIR SUPPLY

● Air compressor trouble—a leaky valve or gummed up piston doesn't hold up production at the Baltimore Luggage Company. For they have two small Westinghouse Air Compressors at most job sites in the plant. When one compressor is "down" for repairs they switch to the auxiliary plant.

Air is cheaper with an "on-the-spot" air supply like this. Smaller compressors cost less to operate. Runs between compressor and equipment are shorter. Pressures are easier to maintain. And compressors last longer because they get less wear.

Westinghouse Air Compressors come in sizes ranging from 1½ to 15 hp. Your Westinghouse Air Compressor dealer can help you select the model that fits your requirements. He's listed in the classified section of your telephone directory.

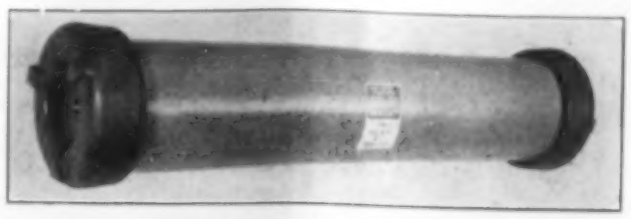
There is a Westinghouse "Y" in the proper size to handle your air requirements. These two-stage, two cylinder compressors can give you high pressure for the jobs that require it, and with the addition of a Westinghouse Reducing Valve, fixed low pressure for jobs like spraying and polishing.

Westinghouse Air Brake COMPANY
INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.
Factory Branch: EMERYVILLE, CALIF.
Distributors throughout the United States . . . Consult your Classified Directory.
Distributed in Canada by: Canadian Westinghouse Co. Ltd., Hamilton, Ontario.

If you write maker identify as IEN - 4366

ACCUMULATOR . . Gas charged type for use in oil hydraulic circuits

Source: PARKER APPLIANCE CO.
17325 Euclid Ave., Dept. IEN, Cleveland 12, Ohio



Catalog File 1536A

Forged steel end caps and a seamless steel cylinder enclose an aluminum piston supported on wiper alignment rings in the construction of this new hydraulic accumulator. The piston is sealed with O-rings. One cap is fitted with a hydraulic port. The other cap carries a gas precharge valve to admit the pressure charge of inert gas such as oil pumped nitrogen. The accumulator supplies hydraulic pressure at high oil flow for relatively short cycles of operation intermittently.

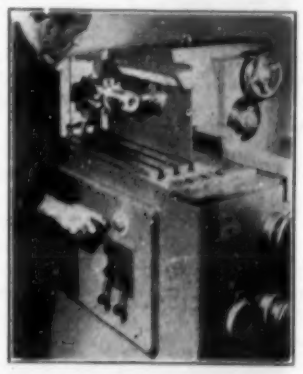
It can function as a leak compensator, as a surge chamber or shock absorber, as an emergency source of fluid power for operation of secondary hydraulic equipment, as a thermal expansion compensator, as a dispenser of fluids under pressure and as an auxiliary source of energy in the intermittent duty installations.

Maximum operating pressure is 3,000 lb. per square inch. Eleven sizes are available with 1½, 4 and 7-in. bore and with length ranging from 9⅜ to 40 inches. Oil volume capacities are 10 to 1,155 cubic inches.

If you write maker identify as IEN - 4367

MILLING . . Semi-automatic machine to machine keyways, splines, slots

Source: KURT ORBAN COMPANY
204 E. 43rd St., Dept. IEN, New York 17, N. Y.



Made in England

New Hurth LF-32 milling machine employs a cutter somewhat less in diameter than the width of a slot to be cut in a workpiece. The work is positioned centrally, with reference to the cutter, and a starting button is depressed. From this point the machining cycle is automatic. The machine will cut a ¼-in. keyway ¾ in. in length by ⅛ in. in depth in 0.54 minute. It will cut a 1¼ by 2⅜ by 7/16-in. keyway in about 2 minutes.

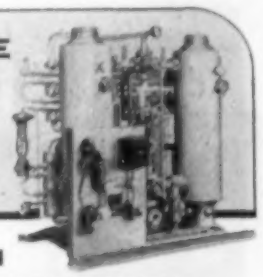
The cutter traverses rapidly toward the work, on pressing the start button. It switches to boring feed just before touching and continues in to the predetermined depth. Then the spindle moves down to the first set stop and the carriage feeds to the end of the slot. At this point, the spindle moves up to the upper stop and the carriage feeds back to the starting point. Finally the spindle returns down to the vertical starting point, retracts and the machine stops.

Horizontal movement is maximum at 15 inches. Maximum manual vertical adjustment is 4 inches. The work table measures 47¼ by 15 inches. Maximum diameter of the cutter is 1½ inches. Axial movement of the spindle is 4¾ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4368

A LITTLE MOISTURE CAN BE A BIG PROBLEM



Get rid of it with a Pritchard HYDRYER!

It's simple to eliminate moisture problems that affect the accuracy or efficiency of your instrument installations or process controls. A Pritchard HYDRYER* is *the* efficient dehydration unit that you can depend on to do that job.

A standard packaged HYDRYER — completely factory assembled — provides long, trouble-free service for most drying jobs. For extreme conditions or special requirements, a custom unit can be readily adapted to your needs.

For complete information, write for Pritchard's new HYDRYER bulletin 16.0.081.

*Registered Trade Name

Industry's Partner for Progress

COOLING TOWERS
SPECIALIZED HEAT EXCHANGERS
GAS & AIR TREATING EQUIPMENT

J. F. Pritchard Co.
OF CALIFORNIA
A DIVISION OF J. F. PRITCHARD & CO.
Dept. 373, 210 West 10th Street
Kansas City 5, Mo.

Representatives in Principal Cities From Coast to Coast

If you write maker identify as IEN - 4369

In 1 minute

The Verifax method, Kodak's sensational new office aid, gives you—

3 copies

of any letter or other office record—legible, dry, photo-exact—and made . . .

on ordinary paper

instead of on specially treated paper. These 3 copies are produced from but *one* sheet of Verifax Matrix Paper for

only 4¢ apiece

which is real copying economy!

Only equipment needed is the compact Verifax Printer . . . priced at low $240. Amazingly simple to operate . . . can be used under present lighting.

Save now! Write for free Verifax booklet and names of near-by dealers.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Price quoted is subject to change without notice.

Kodak

If you write maker identify as IEN - 4370

FOR ACCURATE TEMPERATURE READINGS AT ALL TIMES . . .

. . . SPECIFY *UNITED ELECTRIC* TYPE E8N INDICATING CONTROL

The Type E8N is a wide range, precision-built indicating control that shows the exact temperature of the thermal bulb at all times. It is simple in design, contains no delicate mechanisms and is accurately compensated for wide ambient temperature changes. Various models are available, covering ranges of 300°F to 600°F between limits of -150°F to 600°F, permitting a high degree of sensitivity and repeat accuracy. For complete details and electrical specifications, write for Bulletin #4-1.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 4371

CUTS METAL 15 TIMES FASTER THAN HAND HACK SAW!

New Porter-Cable PORTABLE Band Saw

Slices through 1½" cold rolled steel in 41 seconds! You can take this 16-pound work-demon anywhere . . . equipment yards, stock bins . . . tight spots where costly hand sawing is the only other answer!

Powered for heavy duty, perfectly balanced. *Band speed:* 340 feet per minute. *Capacity:* 3¼" diameter round stock, 3¼" x 4¼" rectangular. *Bearings:* top grade precision ball and needle. Tough aluminum alloy frame. *Motor:* Universal 115 V. AC-DC, 25-60 cycle (230 V also available).

- 10 to 15 Times Faster than Hand Sawing!
- Cuts Ferrous and Non-Ferrous Metals and "Problem" Materials
- Use It in Any Position with Ease and Safety!

WRITE TODAY for full information on Porta-Band Portable Band Saw

PORTER-CABLE MACHINE CO.,
2104 N. Salina St.,
Syracuse 8, N. Y.

Porter-Cable
Quality Electric Tools

Manufacturers of SPEEDMATIC and GUILD Electric Tools

If you write maker identify as IEN-4372

WHERE R-B PUNCHES Cut Your Costs . . .

• IN DIE DESIGNING

. . . you save "board time" by working with the standardized R-B concept of punches, die buttons, punch retainers and die button retainers. R-B standardized equipment reduces drafting time to cut your costs.

• IN DIE CONSTRUCTION

. . . you save "building time" because R-B punches, die buttons, punch retainers and die button retainers are furnished completely finished. R-B saves skilled die-maker's time to cut your costs.

• IN DIE OPERATION

. . . you save "press time" because R-B punches and die buttons are instantly removed and replacements quickly inserted. Inherent accurate alignment and positive locking keep press down-time at a minimum to cut your costs.

Use R-B Engineering Service for Your Tough Piercing Problems

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
DEPT. 75 • 12615 BURT ROAD • DETROIT 23, MICHIGAN

Also Produced in OTHER ALLIED PLANTS
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

If you write maker identify as IEN-4373

ACCURATE TACHOMETER and Vibration Indicator

Check vibration and R.P.M. on:

Reveals vibration where undesirable, shows dead spots where vibration is needed.

VIBRA-TAK In Leather Pocket Carrying Case

A valuable tool you will want to carry with you. Easy to operate by moving tuning slide to get accurate scale reading of vibration cycles per minute or shaft speed in R.P.M. The Vibra-Tak has a range of 2,000 to 15,000 C.P.M. Just place bullet nose against vibrating object, adjust tuning slide to point where wire reed reaches maximum "throw" and read the accurate scale.

ONLY $5.00

Just the price of a fountain pen. Leather pocket carrying case. Print name and address clearly and enclose check or money order. Your Vibra-Tak quickly shipped prepaid.

MARTIN ENGINEERING COMPANY
Kewanee 2, Illinois

If you write maker identify as IEN-4374

FREE! yours for the asking

This 20 page authoritative book on self-priming centrifugal pumps is yours for the asking — no strings attached . . . no obligation.

Now, with a trend in industry toward self-priming pumps, this profusely illustrated book, written by A. S. Marlow, Jr., will give you *all* the facts on centrifugal pump theory and self-priming pump operating principles.

Mail Coupon for your FREE copy today!

MARLOW PUMPS • RIDGEWOOD, NEW JERSEY

Please send me my free copy of "Self-Priming Centrifugal Pumps by A. S. Marlow, Jr.

Name _____

Address _____

City _____ Zone _____ State _____

If you write maker identify as IEN-4375

TRUCK . . Engine driven tractor to move and spot railroad cars

Source: FRANK G. HOUGH COMPANY
841 7th St., Dept. IEN, Libertyville, Ill.

Rides over obstructions

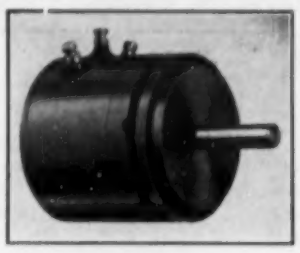
Dual car couplers, an air compressor, a switchman's platform and catwalk, hydraulically driven winch and four wheel vacuum booster brakes are now available on the company's car moving Payloader tractor, previously described IEN-13234-52. The big tires permit the machine to ride over railroad tracks without difficulty. Dual couplers are located so the tractor can handle cars while straddling either rail. The air compressor provides emergency control of the air brakes on cars that are being moved. The rear mounted hydraulically driven winch provides a 30,000-lb. line pull.

Overall dimensions are about 15 by 8 by 7 feet. Speeds, in forward direction, range from 2 to 17 mph. and in reverse direction from 3 to 27 mph. Weight is about 25,000 pounds. Draw bar pull is about 8 ton with a gasoline engine drive and about 7 ton with a diesel engine.

If you write maker identify as IEN-4376

CONTROL . . Potentiometer designed for bushing or servo mounting

Source: HELIPOT CORPORATION
916 Meriden Ave., Dept. IEN, South Pasadena 12, Calif.



Small and precise

The company announces a number of improvements in its Series-T Helipot potentiometer line. The new unit measures ⅞ in. in diameter, weighs 0.6 oz., is assembled on miniature ball bearings. It employs a toroidal coil for resistance in a range between 10 and 100,000 ohms.

Shaft diameter has been increased to ⅛ inch. Standard electrical rotation has been increased to 354 degrees. Rotation through a complete circle can be specified. Five sections can be ganged on a common shaft and nine taps can be provided per section, each electrically welded to a selected single turn of the resistance winding without shorting out adjacent turns.

Operating temperature has been increased to 105 deg. C. ambient. Power rating has been increased to 1.2 watt at 40 deg. C. ambient. Standard linearity tolerance is within 0.5 per cent. Best practical linear tolerance is within 0.2 per cent.

If you write maker identify as IEN-4377

Ammonia leaks can be detected by lighting a new Sulfstix sulfur impregnated taper and holding it near equipment suspected of the leak. A white cloud will indicate presence of ammonia. The taper can be extinguished and used again. It is manufactured by Allied Chemical & Dye Corp., 40 Rector St., Dept. IEN, New York 6, N. Y., and is supplied in a container to be carried in a pocket or hung near ammonia equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4378

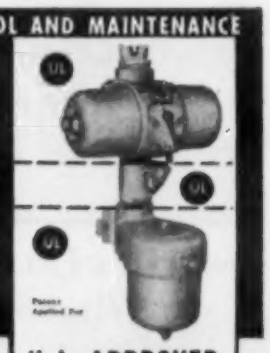
FOR *Safe* ELECTRICAL CONTROL AND MAINTENANCE

APPLETON

Explosion-proof Dust-tight, Rain-tight

CIRCUIT BREAKER, MOTOR STARTER and COMBINATION MOTOR STARTER

UNILETS



U. L. APPROVED
GREATEST *Explosion-Proof* ADVANCE IN YEARS!

- 7-thread flame-tight seal no bolts or flanges
- Approved for banked circuit breaker grouping
- Safe motor starter repairs without disconnecting other branch circuits
- Installed without heavy lift equipment
- Simplified "straight-thru" wiring design
- Accommodate oversize conduit and conductors
- Built-in push-button and pilot-duty control

Write Now For **BULLETIN "BH"**

Completely new and different! Here's superior U. L. Approved protection and far more versatile electrical control indoors and out, wherever flammable or corrosive atmospheres and tricky wiring pose seemingly insurmountable safety and maintenance problems. Check the features. Compare the advantages. It pays to install *Appleton Unilets!*

Greater Safety...Stable Production

Appleton Unilets are the *only* enclosures U. L. Approved for banked circuit breaker grouping. Properly sealed, each Appleton Unilet carries U. L. Approval for banked combination motor starter groupings in popular sizes. The individually sealed design permits safe entrance to one motor starter without disconnecting other branch circuits.

Sold Nationally Through Electrical Wholesalers

APPLETON ELECTRIC COMPANY
1716 Wellington Ave. • Chicago 13, Ill.

with full details on U. L. Approved sizes and complete description

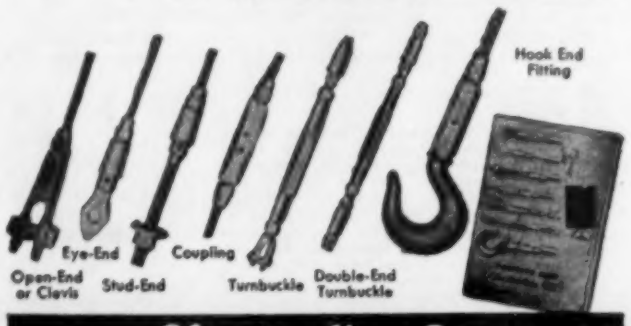
THE STANDARD FOR BETTER WIRING FOR OVER 50 YEARS

If you write maker identify as IEN-4379

Cut out needless re-roping costs

USE ELECTROLINE WIRE ROPE FITTINGS

In minutes, ordinary labor can install Electroline fittings that will hang on for all time. Prolong wire rope life by damping vibration stresses thus eliminating wire rope fatigue at the fitting. Write for Electroline Catalog. It points out many savings—no cost.

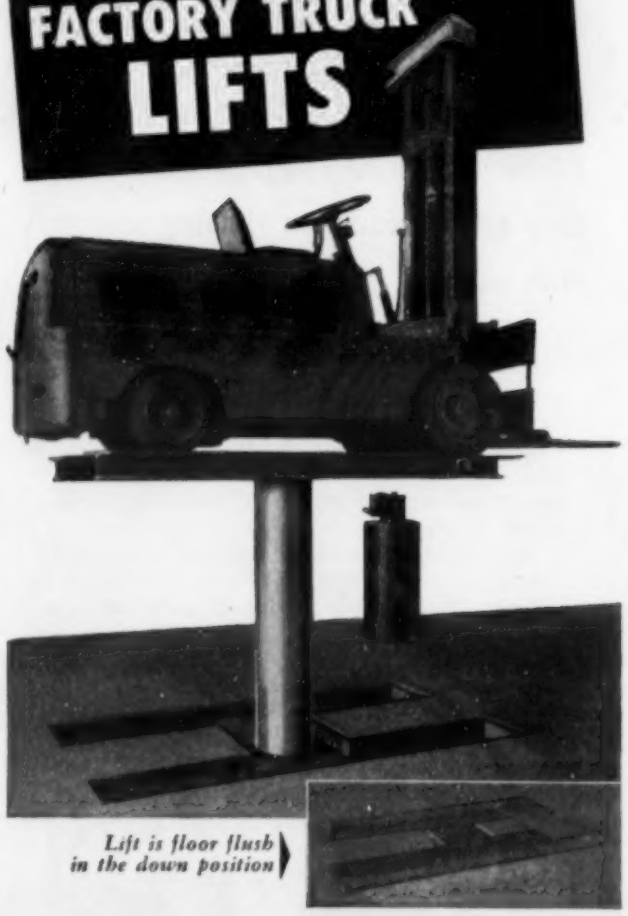


Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as IEN-4380

INCREASE FACTORY TRUCK LIFE, DECREASE DOWN-TIME BY SPEEDING SERVICE AND MAINTENANCE WITH

JOYCE FACTORY TRUCK LIFTS



Lift is floor flush in the down position

Now, you can keep your factory trucks rolling, economically, with these new Joyce Factory Truck Lifts. The drive-on model (illustrated) features maximum under-truck accessability, and is designed to accommodate all sizes of factory trucks. An adjustable bridge is provided for three wheel trucks. Also available in two-post, free wheel models. Choose from air-oil or electric hydraulic operation, and hand or foot controls in each model.

The Joyce-Cridland Co. manufactures a complete line of Materialifts, Elevators, Cross-over Bridges, Hydraulic Feed Tables, Factory Truck Lifts and Industrial Jacks.

JOYCE MATERIALIFTS

WRITE TODAY FOR COMPLETE INFORMATION!

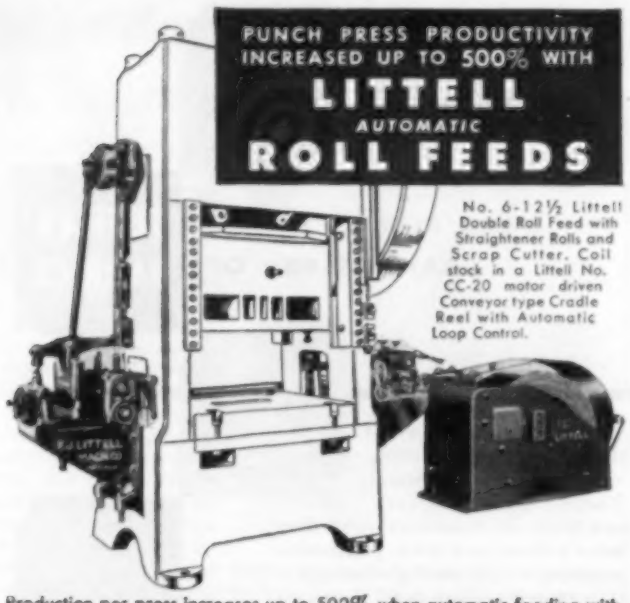
IN CANADA: Midland Foundry & Machine Co., Ltd., Midland, Ontario

THE JOYCE-CRIDLAND CO.
DAYTON 3, OHIO

If you write maker identify as IEN - 4382

PUNCH PRESS PRODUCTIVITY INCREASED UP TO 500% WITH

LITTELL AUTOMATIC ROLL FEEDS



No. 6-12½ Littell Double Roll Feed with Straightener Rolls and Scrap Cutter. Coil stock in a Littell No. CC-20 motor driven Conveyor type Cradle Reel with Automatic Loop Control.

Production per press increases up to 500% when automatic feeding with Littell Roll Feeds replaces hand feeding. The savings in handling and storage of coil stock added to the economies of faster production produce an automation dividend. Littell Roll Feeds in a wide range of sizes and models handle stock up to .156" maximum thickness and up to 72" maximum width at speeds of 50 to 250 strokes per minute. Lengths fed per stroke range up to 50". Standard Littell Automatic Feeds serve all types and sizes of presses. ***WRITE FOR THE LITTELL ROLL FEED CATALOG***

F. J. LITTELL MACHINE CO.

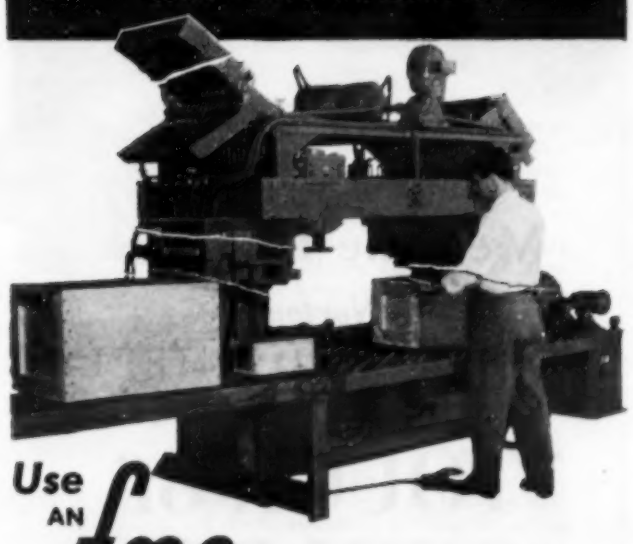
ROLL FEEDS • DIAL FEEDS
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland

Speed with Safety

4133 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

If you write maker identify as IEN - 4383

***If* YOU SHIP IN BOXES**
you can
SPEED PRODUCTION
and
SAVE MAN HOURS
WITH THIS MACHINE



Use AN *fmc fast & versatile*

RANDOM SIZE BOX LIDDER

ON THIS MECHANICAL NAILING MACHINE
ONE OPERATOR
LIDS 400 TO 600 BOXES OF MIXED SIZES PER HOUR

Here is a new automatic lidding machine that can easily do work that formerly required several nailing machines. Random Size Boxes can be quickly lidded in rapid succession. Machine adjusts automatically to various box sizes. Only one operator required—lidded box is automatically ejected through open back of machine onto conveyor for removal.

A TIME-SAVING DEVICE THAT WILL PAY DIVIDENDS THRU GREATER PRODUCTION

Sorting boxes into common sizes is no longer a lidding requirement. Now, a common conveyor can transport boxes of mixed sizes from the packing area to the lidding machine. One Random Size Box Lidder and one operator are the only requirements necesary to solve this universal lidding problem.

HOW THE MACHINE IS MADE

Welded steel construction—electrically controlled—hydraulically operated—foot pedal actuated.

SIZES AVAILABLE

Only one standard size machine is needed to handle boxes varying in any dimensions from 6" X 6" X 9" to 24" X 24" X 50".

HERE'S WHERE IT IS NOW APPLIED

Proved in production by Arsenals, Air Bases and Ordnance Depots. NOW AVAILABLE FOR ANY INDUSTRY SHIPPING IN BOXES OF MIXED SIZES.

Available FROM *fmc*

TRADE MARK

FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION, RIVERSIDE, CALIFORNIA

WRITE FOR FREE LITERATURE!

If you write maker identify as IEN - 4385

RECORDING . . Electronic instrument, null balance design for ac. actuation

Source: FIELDEN INSTRUMENT DIVISION
2920 N. 4th St., Dept. IEN, Philadelphia 33, Pa.

Adaptable

Recording and control of conductivity, force, position, strain, temperature and telemetering are typical applications for this null-balance instrument. Its bridge components are contained in a single interchangeable unit to permit quick range changing as well as adaptation of the recorder to different measurements. The unit is available with a maximum of four inputs to permit averaging, addition or differentiation.

Nickel, tungsten, platinum resistance temperature detectors are available covering temperatures from minus 200 to plus 500 deg. C. A range of controls, both electric and pneumatic, can be specified. Input is 35 microvolts on 60 cycle ac. Power supply is 110 volt 50/60 cycle ac. Recording accuracy and sensitivity are within 0.5 per cent.

If you write maker identify as IEN - 4386

SIGNALING . . Television equipment for closed circuit cameras, receivers

Source: BLONDER-TONGUE LABORATORIES INC.
536 North Ave., Dept. IEN, Westfield, N. J.

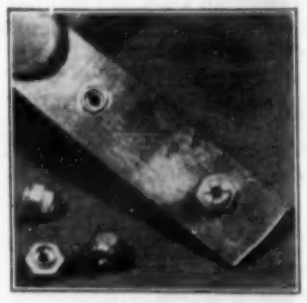
Technical data upon request

The company announces availability of its Add-A-Unit equipment, consisting of circuits and accessory units, into which TV signals can be fed from a closed circuit camera and from which one or more standard television receivers can be operated. The company is prepared to design and install the equipment for use with standard cameras and receivers.

If you write maker identify as IEN - 4387

FASTENING . . Clinch locknut for application in thin sheet metal

Source: STANDARD PRESSED STEEL CO.
Box 732, Dept. IEN, Jenkintown, Pa.



Cadmium plated

Clinch Locknut, initially developed for use in electronic equipment, is now generally available to mount parts and assemblies on thin section materials. The hollow knurled shank is inserted in a hole and is peened over to make the nut integral with the metal sheet in which it is to provide a threaded anchor opening.

Standard sizes are 4-40, 6-32 and 8-32 in National Coarse Series. Two sizes, 10-32 and ¼-28, are available in the National Fine Series. Six shank lengths are 0.063 to 0.225 inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4388

HOW TO PACKAGE SMALL ITEMS

Safely . . . with Visibility

LOOK INTO LUSTEROID PLASTIC VIALS and TUBES

There's a LUSTEROID plastic container just right for carrying items too small for ordinary packaging. These crystal clear vials and tubes are strong, tough, unbreakable. Save you money, too. No labels to affix because LUSTEROID is printable. Cuts handling and shipping expense because it's so light in weight. Wide choice of colors in clear or opaque in standard diameters from ¼" to 1½" and lengths up to 6". Cork, slip-on and screw-cap closures.

Write for samples and details today.

LUSTEROID CONTAINER COMPANY, INC.
10 West Parker Avenue, Maplewood, N. J.

If you write maker identify as IEN - 4389

it's never too early for magnetic protection . . .

PRATER PERMANENT MAGNETS

are recommended for installation — **today** — before uncontrolled tramp iron is allowed to play havoc with your equipment.

PRATER PERMANENT MAGNETS, readily attached to hoppers, spouts or chutes, reach deep into the flow to weed out these destructive metals, increase operating efficiency and safeguard life and property. Each installation is specific as to type, size and arrangement of magnets, as specified by your requirements.

Write for details.

- SINGLE GAP
- DOUBLE GAP
- HEAVY DUTY
- HUMP CHUTE

PRATER PULVERIZER COMPANY
1536 S. 55th Court • Chicago 51, Ill.

PRATER

If you write maker identify as IEN - 4390

CUTS METAL FAST AND ACCURATELY

Whether you shear 26 gauge or one inch thick metal, you want smooth, straight, burrless cuts. Resulting pieces must be accurate within close tolerances.

In addition, you want a machine that performs for long periods without need of adjustment and maintenance. It must be easy to operate and be provided with ample safety features. Knives must stay sharp after thousands of cuts.

No machine meets these requirements better than a Steelweld Shear. We urge you to get the facts.

STEELWELD Pivoted-Blade SHEARS CATALOG No. 2011

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4233 East 282nd St., Wickliffe, O.

STEELWELD SHEARS

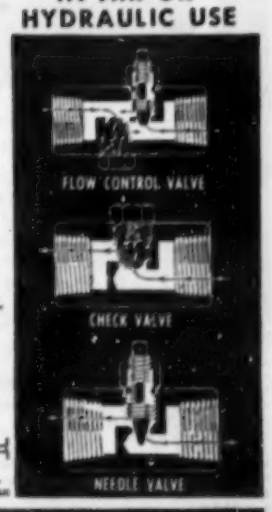
If you write maker identify as IEN - 4391

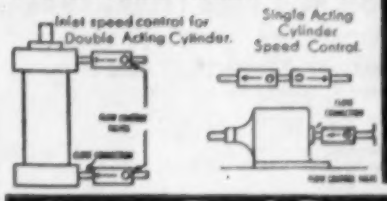
Get Easier, More Accurate Cylinder Speed Control with *Pneu-Trol* VALVES IN AIR OR HYDRAULIC USE

2000 and 5000 (steel) P.S.I.

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Check Valve and Needle Valve incorporate single function features of Flow Control Valve. All valves available in 6 female pipe sizes — ⅛" to ¾". Valve bodies are made from brass, aluminum, steel or stainless steel. Attractive Prices — Immediate Delivery.

Write for Illustrated Circular and Price List.





Pneu-Trol Devices, Inc.
1438 N. Keating Ave., Chicago 51, Ill.

If you write maker identify as IEN - 4392

YOU CAN SEE THE DUST BUT NOT THE MONEY

The dust is visible, but the dollars and cents loss of inefficient collection methods is hard to see. If saleable or reusable process dust is going up your chimney you can turn this loss into profit with an efficient dust collection system geared to the needs of your particular process.

Our new manual, "A Simplified Test Method for Dust Control Determination" describes the easiest method of determining your dust problem and equipment needs for effective control and recovery.

For your copy, just clip this ad to your company letterhead and sign your name and title.

dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

If you write maker identify as IEN - 4393

ABRASION TESTER

- SIMULATES ACTUAL WEAR CONDITIONS
- FOR PLASTICS, RUBBER, TEXTILES, PAINTS, LINOLEUM
- GIVES ACCURATE NUMERICAL REPORT

The Model 140 Taber Abraser is recognized the world over as the STANDARD for testing the wear resistance of plastics, rubber, textiles, linoleum, paint and other protective coatings. Anyone can make a scientific, wet or dry, comparative abrasion resistance test by merely inserting sample in instrument and taking numerical reading from dial. Send coupon below for descriptive literature.

SHEAR HARDNESS and DIAMOND SCRATCH TESTER

Tests quality of plastic material and plastic coated surfaces to resist scratches, digs, scrapes and other physical damage not classed as normal wear. Handles specimens from thin plate to 1/4" thickness. Used everywhere for precision perfect tests.

STIFFNESS TESTER

Determines both INITIAL and NORMAL stiffness of sheet and wire specimens in *eight* test ranges and gives report from DIRECT READING. Precision shear cuts exact specimens from paper or plastic (up to 20 pt.) to eliminate possible variation in results.

MAIL COUPON FOR FREE LITERATURE

Taber **INSTRUMENT CORPORATION** SECTION 15
111 Goundry St., North Tonawanda, N. Y.

- ☐ Please send me booklet on Taber Abraser
- ☐ Please send me booklet on Taber Hardness and Scratch Tester
- ☐ Please send me booklet on Taber Stiffness Tester

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

If you write maker identify as IEN - 4395

METER . . Electronic instrument reads resistance, dc. and ac. volts

Source: BERKELEY SCIENTIFIC DIVISION
2200 Wright Ave., Dept. IEN, Richmond, Calif.

For general use

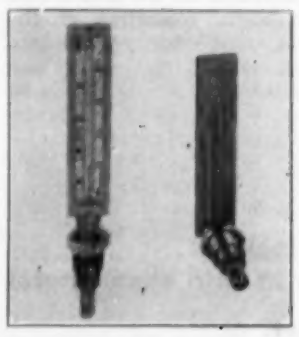
Model 201 is a new vacuum tube voltmeter in the Shasta line of miniature test instruments. It is available with the new Illumi-probe, a miniature lamp built into the plastic probe end to assist in readings in dark corners of the chassis. A set of Klipzon probes are supplied also for resistance measurements. High voltage and high frequency probes can be specified as accessories.

Seven scale ranges are provided between 1.5 and 1,500 volts on 11 megohms impedance. Values of sign. waves, 1.5 to 1,500 volts rms. full scale, and peak-to-peak values of 4 to 4,000 volts are provided in the dc. ranges. Separate scales read 0 to 4 volts peak-to-peak and 0 to 1.5 volt rms. for high accuracy. Resistance values are 1,000 ohms to 1,000 megohms full scale in seven ranges. Maximum accuracy is at mid-scale which is calibrated in multiples of 10 ohms.

If you write maker identify as IEN - 4396

THERMOMETER . . Mercury filled, straight and angular, 5-inch scale

Source: PRECISION THERMOMETER & INSTRUMENT CO.
1434 Brandywine St., Dept. IEN, Philadelphia 30, Pa.



Bulletin E-2

Separable socket design characterizes this new Princo thermometer. The socket, or well, protects the bulb, permits removal of the thermometer without leaving an opening. The socket is threaded for ½ or ¾-in. pipe and is available in steel, stainless steel or brass. The ½-in. unit provides an immersion length of 1¼ and 3¼ in. in two available lengths. The ¾-in. size provides for a little under 2 and 4 inches.

Aluminum alloy is employed in the V-type cases for the straight and rear-angle designs. Cast brass is standard in the other angular assemblies. Brass stampings make up the front frames. Housing finish is gray. The scale plate is brass in silver finish with black figures. The glass front measures about ⅛ in. in thickness. Five scale ranges are between minus 40 and plus 500 deg. F.

If you write maker identify as IEN - 4397

Seventeen diameters are included in a new stocked line, MN-450 to MN-1250, of unground carbide brazed type mandrel nibs to draw steel, aluminum and other metal tubing. Smallest stock size measures 0.450 in. in diameter. The largest measures 1.250 inches. The nib is designed for final finishing by the user. It is available from Carboloy Dept., General Electric Co., Dept. IEN, Detroit 32, Mich.

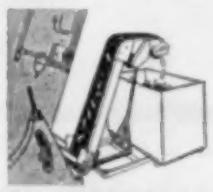
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4398

A PAID NEWS ADVERTISEMENT BY RAPID-STANDARD CO.

NEW RAPISTAN MP MAGNETIC CONVEYOR for high volume handling of small parts or scrap

For "tight space" handling of any ferrous scrap or small parts, this new Rapistan unit is unusually adaptable to press-room operations. Magnetized bed attracts material to center, eliminating need for guards. Operates at inclines up to 72 degrees to save space. Magnetic attraction ends at top, permitting materials to fall into tote box. Pressmen, freed of handling chores, can resume full time production. The new Rapistan MP Magnetic Parts & Scrap conveyor is particularly suited to handling scrap, nails, slugs, production parts, strip stock, cold forgings, etc. Simplified construction holds cost considerably below that for nearest competitive unit. For full information, specifications and prices, write direct to:

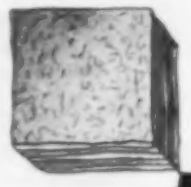


The RAPIDS-STANDARD CO., Inc.
228 Rapistan Building
Grand Rapids 2, Michigan

Rapistan BETTER CONVEYING EQUIPMENT

If you write maker identify as IEN - 4399

to designers and engineers:



SEND FOR A SAMPLE SET OF TUFFLEX FABRICS

You've never seen anything like these versatile, new non-woven fabrics! They're made from various fiber combinations—and they have a thousand uses: protective padding—cushioning—linings—fillers are only a few. You can choose from types which are soft, firm, springy, resistant to compression, non-abrasive, non-corrosive, or high in wet and dry strength. See for yourself how Tufflex fabrics can serve YOU better. Send now for free samples—no obligation. Wood Conversion Company, Dept. 126-44, First National Bank Building, St. Paul 1, Minnesota.

KEEP YOUR EYES ON TUFFLEX* FABRICS

*Reg. U. S. Pat. Off.

If you write maker identify as IEN - 4400

Meet the BIG 4

Norton
REINFORCED WHEELS
with the value-adding

"TOUCH of GOLD"

Here's the Line-Up

BD Rigid hub-type, resinoid bonded. Glass cloth reinforcement for high strength plus the Nylon layer add up to extra hub-wheel safety. For the more severe jobs on your right angle grinders.

BFR Semi-flexible hub-type, resinoid bonded. Cotton fabric reinforcement with the additional layer of Nylon. For better finish and contour blending.

BF Semi-flexible straight wheel, resinoid bonded. Cotton fabric construction similar to the BFR but without Nylon reinforcement. For periphery grinding only. An excellent deburring and finishing wheel. Also available in mounted wheels and points and in hand sticks.

BN Straight wheel, resinoid bonded. Glass cloth reinforcement, as in the BD. Provides very high resistance to breakage in a wide range of cutting-off and other jobs.

Ask your Norton Distributor to demonstrate Norton Reinforced Wheels in your shop. Or write to NORTON COMPANY, Worcester 6, Mass. for the Brand New Catalog on Reinforced Wheels. Distributors in all principal cities, listed under "Grinding Wheels" in your classified phone directory. *Export:* Norton Behr-Manning Overseas Inc., Worcester 6, Mass.

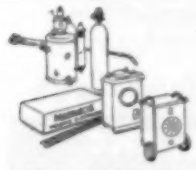
NORTON ABRASIVES

Making better products . . . to make other products better

If you write maker identify as IEN - 4402

Look at Marquette's New Redi-Arc . . . Before you Buy any Welder

If you're looking for a repair and maintenance welder that's ideal for use in work-crowded shops . . . take a good long look at the new A.C. Redi-Arc. Look at how this low-cost welder reduces "stand by" time on breakdowns. Note the "Instant Arc" striking characteristics. It gives a soft, steady, surge-free arc that's easily struck and held even by non-professional welders. Note its capacity—the highest possible in a unit of its size and rating. And it performs at full capacity even on low line voltages. *Everywhere* you look—inside or out—from its carefully pre-set volt/amp. ratios to its rugged, double-pole On-Off switch—you'll see why the new Redi-Arc is your best investment for maintaining production lines at peak efficiency.



Write for full details today

MARQUETTE MANUFACTURING CO., INC.

307 East Hennepin Avenue • Minneapolis 14, Minnesota

If you write maker identify as IEN - 4403

Overhead Heaters a Maintenance Headache?

TRY TORNADO®

Periodic cleaning of the plant heating system used to be a real problem for the Great Lakes Spring Division of Rockwell Spring & Axle Corporation. Heaters would clog with dust, preventing proper circulation.

The trouble was that blowing out 75 unit heaters hanging 14 feet above the floor caused a dust storm that required a major cleanup of machinery and equipment afterward. And the job had to be done on overtime when the rest of the plant was shut down.

That was before Tornado Vacuum went to work. Now it takes about 3½ hours to do the whole job. There's no climbing up ladders and no dust problem during or after cleaning . . . it's done during the regular work shift, too.

Tornado makes quick work of cleaning machines and other equipment—gets into corners and behind machinery where sweeping is practically impossible. The Tornado does both wet and dry pickup, so cutting oil and water are no problem. Find out how the Tornado can help your housekeeping headache.

WRITE FOR BULLETIN 600

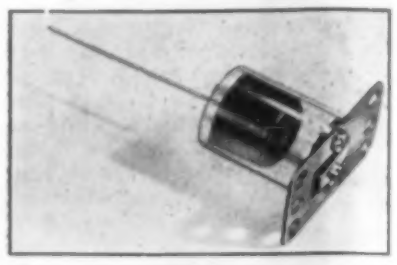
BREUER ELECTRIC MFG. CO.

5108 North Ravenswood Avenue • Chicago 40, Illinois

If you write maker identify as IEN - 4405

INSULATING . . Dash pot absorbs shock loading, cushions action

Source: ELECTRIC REGULATOR CORP. Off Perry Ave., Dept. IEN, Norwalk, Conn.



List is $2

New **dash pot** is made of a glass cylinder and a graphitized carbon piston. The latter is ground and fitted to a tolerance within 0.002 inch. The cylinder is mounted on a metal plate. Standard construction employs a ⅝-in. piston weighing 0.1 ounce. Maximum stroke is ½ inch. Damping action is adjustable. Maximum tension force is 4 lb. at sea level.

If you write maker identify as IEN - 4406

CYLINDERS . . Air and hydraulic, carried in stock for quick delivery

Source: MILLER FLUID POWER CO. 2040 N. Hawthorne Ave., Dept. IEN, Melrose Park, Ill.

24 to 72 hours from order date

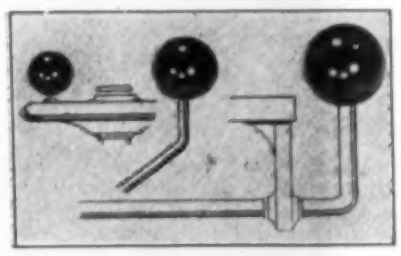
The company announces availability of a standardized line of "stock" pneumatic and hydraulic cylinders, the former for 200-lb. pressure, the latter for 2,000 pounds. Construction includes steel heads, caps and mountings, chromium plated piston rods, dirt wiper seals, piston and rod seals that do not require adjustment.

Both pneumatic and hydraulic cylinders are available in cushioned and non-cushioned design, the pneumatic cylinders in four bore sizes from 2 to 6 in. and the hydraulic cylinders in three sizes from 1½ to 4 inches. Each is available in 2, 4, 6, 8 and 11-in. stroke. Cylinders, cushioned at both ends, are available in 2, 3¼, 5 and 8 in. bore for pneumatic operation and in 2 and 3¼ in. bore for hydraulic operation. These are available in 3, 5, 7, 9 and 13-in. strokes. Attachments are supplied to order for conversion to flange, foot or pivot mounting.

If you write maker identify as IEN - 4407

MACHINE PARTS . . Lever knob made of plastic with threaded insert

Source: JERGENS TOOL SPECIALTY CO. 712 E. 163rd St., Dept. IEN, Cleveland 10, Ohio



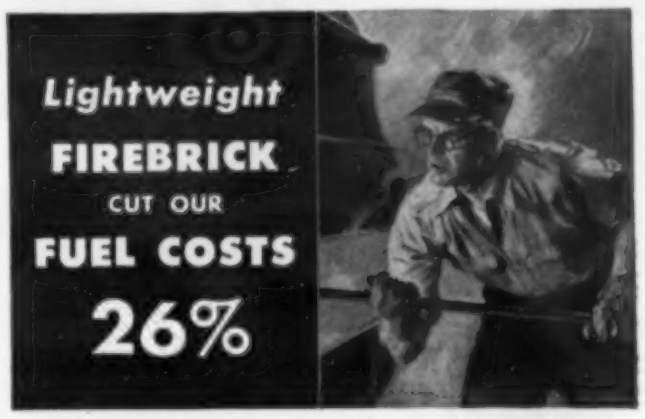
Easy to grip

Three diameters in which this new plastic ball is available include 1, 1⅝ and 2 inches. The largest size carries a ½ or ⅝-in. threaded steel insert. The intermediate size has a ⅜-in. brass insert and the 1-in. ball has a ¼-in. threaded hole but no insert. The balls insulate against heat and electric shock. They are made of phenolic plastic for good resistance to heat and flame.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4408

If you write maker identify as IEN - 4409



And that's not all! This user, who relined his annealing furnace with B&W *lightweight* Insulating Firebrick practically doubled his furnace output.

What's the story behind the remarkable performance of B&W IFB?

Lightweight B&W IFB mean that you have millions of tiny, insulating air cells in your furnace walls—keeping the heat inside your furnace where it can work for you. And because B&W IFB store and conduct less heat, they reduce heating up time and respond quickly to temperature changes, assuring excellent temperature control.

Get all the facts from your B&W Refractories Engineer. Offices in principal cities.

THE BABCOCK & WILCOX CO.

Refractories Division

General Offices: 161 East 42nd St., New York 17, N. Y.

R-509 *Works: Augusta, Ga.*

If you write maker identify as IEN - 4410

D.O.James

Established 1888

MOTORIZED GEAR SPEED REDUCERS

A CENTRALLY BALANCED DRIVE WITH GREAT EMERGENCY STRENGTH

Simplified assembly using standard flange motors, coupling connected with high speed pinion gear shaft, making for greater accessibility.

SINCE 1906 . . . When the first D.O.James Motorized Gear Speed Reducer was built . . . We have improved the design and manufacture of Motorized Gear Reducers, maintaining in them the same high quality of manufacture as our other standard Gear Speed Reducers.

The many advantages of D.O.James Motorized Gear Speed Reducers and their continued proven performance for many years make them a leading choice with power transmission designers and engineers.

D.O.JAMES GEAR MANUFACTURING CO.

MAKERS OF ALL TYPES OF GEARS AND GEAR SPEED REDUCERS

1140 WEST MONROE STREET, CHICAGO, U. S. A.

If you write maker identify as IEN - 4411

WHEN ARE TWO HEADS BETTER THAN ONE?

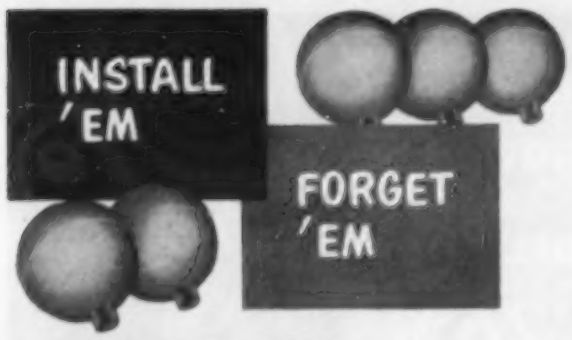
FLAT SPRING STEEL is constantly being purchased for completely new end uses. In most of these new applications the desired results are achieved. If, however, the Flat Spring Steel does not perform as hoped, the steel used may be unsuitable for the job, or something may be askew in the material's application.

That's when two heads can be better than one! Roebling is just about the nation's largest producer of High Carbon Flat Spring Steel . . . and Roebling laboratories are always glad to cooperate with manufacturers, designers and engineers who have a problem child. Send details to Wire and Cold Rolled Products Div., John A. Roebling's Sons Corp., Trenton 2, N. J.

A subsidiary of The Colorado Fuel & Iron Corporation

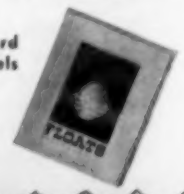
ROEBLING

If you write maker identify as IEN - 4412



STAINLESS STEEL FLOATS

● Stainless floats by Chicago Float Works give you a practically permanent installation. Whether for use on original equipment or for replacement, you just put 'em in and forget 'em. You'll get years and years of trouble-free service in high or low temperatures or pressures. All sizes, shapes, spud connections available. No corrosion problem . . . extreme buoyancy — the best in floats to meet every need!



● Standard Diameters 2" to 10" ● All Standard Spud Connections ● Top quality Stainless Steels ● Non-corized weld for superior strength, and corrosion resistance available where required

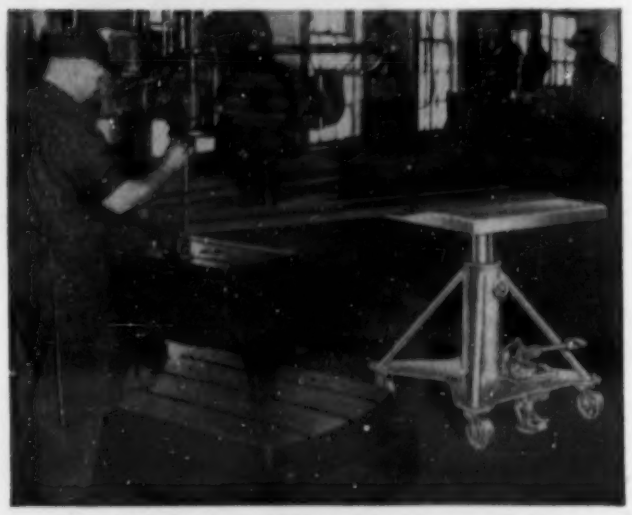
Send for complete bulletin on styles, sizes, shapes, spud connections and recommendations.

CHICAGO FLOAT WORKS

2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 4413

• For DIE HANDLING
• SHEET FEEDING
• WORK POSITIONING
• Supporting OVERHANGING WORK



RAYMOND

Portable, Hydraulic ELEVATING TABLE

● Increase production . . . decrease hazards . . . with a RAYMOND Portable Elevating Table. This sturdy table raises or lowers work to the most convenient working level. Use it for positioning and handling throughout your plant.

● The RAYMOND Portable Elevating Table is hydraulically operated . . . features convenient foot pump operation, leaving the operator's hands free. 30" square top can be rotated if desired. Smooth-rolling casters make table highly portable. Floor lock enables it to be held securely in place. Standard Model elevates 28" to 44" . . . Telescopic Model, 28" to 50". Both have 2,000 lb. capacity.

● SEND FOR CATALOG Get full details on the RAYMOND Portable Elevating Table. Mail coupon for Hydraulic Elevating Equipment Catalog today!

The RAYMOND CORPORATION

3530 Madison St., Greene, N.Y.

Please send me Hydraulic Elevating Equipment Catalog.

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ STATE _____

If you write maker identify as IEN - 4415

SHEARING . . Heavy-duty tools for soft cable, wire rope, steel bars

Source: H. K. PORTER INCORPORATED
74 Foley St., Dept. IEN, Somerville, Mass.

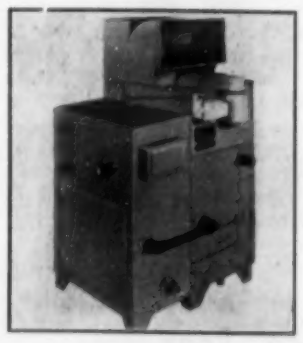
Details upon request

Illustrated is one of three new heavy duty hand tools that include a shear type tool to cut soft copper and aluminum cable, either plain or insulated, in sizes to 1⅜ in. in outside diameter, two units, as illustrated, for wire rope to ⅜ in. and to ⅝ in., and a pinch type tool in which the blades meet rather than pass to cut concrete reinforcing bars to ½ in. and wire rope to ¾ inch. The shearing tools for electric cable and wire rope carry notched jaws to lock the work in place and prevent deformation. Designations are Cable Cutter No. 2 CN, Shear Cutter No. 1 and No. 3 TN and Bar Cutter No. 5.

If you write maker identify as IEN - 4416

COOLING . . Heat exchanger also heats and circulates liquid

Source: MAYER REFRIGERATING ENGINEERS INC.
Dept. IEN, Lincoln Park, N. J.



Model TX-50

Water is cooled, or heated, to maintain a predetermined temperature and is circulated to prevent overheating in electronic equipment machine housings, oil and coolant reservoirs. It will supply cooling water as low as 86 deg. F. with a 70-deg. wet bulb temperature. Capacity is 36,000 to 465,000 btu. per hr. with entering water at 90 to 16 deg. F. The circulating pump will handle 20 to 150 gal. per minute.

Assembly includes temperature controls, heating equipment to raise temperature to a control point on cold starting, a cooling coil and spray chamber, fan and fan motor, recirculating pump, surge tank, safety controls, motor controls and switches, all assembled in a steel housing. Dimensions are 44 by 31 by 61 inches.

If you write maker identify as IEN - 4417

New hook, made of steel tube, is flattened at one end and fitted with a pair of suction feet to hook into the window opening on the side of an automobile and to ride on the feet against the door panel. A pair of these hooks can be employed to carry long materials such as ladders, poles, pipe. The hook projects 12 in. beyond the side of the car. It is known as the Sidalong Carrier and is manufactured by Acme Metal Products Co., 1807 E. 79th St., Dept. IEN, Chicago 20, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4418

BREEZE *Job-Engineered* BELLOWS

...Give LASTING PROTECTION Where Ordinary Bellows Fail

Breeze welded diaphragm bellows meet the operating life cycle of any equipment in which they are used *because every Breeze bellows design is individually engineered and built for the job.*

Breeze has no "stock bellows," but if you have a vibration problem in ducts, large or small, or want permanently sealed valve enclosures in any type of piping system, or need bellows for torque transmission or other uses, Breeze experience can quickly provide the answer . . . and production can meet your requirements.

A Breeze bellows is dependable because each diaphragm is designed to work well within its elastic limit. This is accomplished by thorough analysis of each application and careful design of the bellows to withstand all requirements. "Job engineering" each individual type eliminates makeshifts, assures efficient performance.

Breeze bellows are made in stainless steel, inconel, monel, nickel, steel, or other weldable alloys.

Feel free to consult us without obligation on your existing bellows requirements, or any other project where reliable welded diaphragm type bellows might solve a design problem.

BREEZE CORPORATIONS, INC.
41-V S. Sixth St., Newark 17, N.J.

OTHER BREEZE PRODUCTS: ACTUATORS · RADIO SHIELDING · AEROSEAL HOSE CLAMPS

If you write maker identify as IEN - 4419

jari (Self-Propelled) POWER SCYTHE
does the work of 8 men

- Works on rough ground.
- Cuts under fences up to buildings, etc.
- Cuts heaviest growth.
- SAFE: will not throw objects—will not cut operator's foot.
- Lightweight, easy to operate, self-propelled.

One man will cut several acres of heavy growth per day with a Jari. Large wheels designed for heavy cutting over rough areas. It has been adopted by many highway and maintenance departments for its rugged dependable work.

CUTS WEEDS TALL GRASS BRUSH

3 MODELS

JARI SR.: A single purpose machine for heavy cutting on rough, hilly ground. Self-propelled.

JARI CHAMPION: Self-Propelled—Summer and winter application with attachments for plowing snow, reel cutting, weed spraying.

JARI JR.: Self-Propelled—Versatile 4 attachment machine for heavy cutting, weed spraying, snow plowing.

EXTRA ATTACHMENTS *Write for Bulletin*

jari PRODUCTS, INC.

2938-J PILLSBURY AVENUE • MINNEAPOLIS 8, MINNESOTA

If you write maker identify as IEN - 4420

An Important Wire Cloth Check Point

One of a battery of looms for weaving cloth as fine as 400 mesh

Weaving Precision

Our skilled workmen and precision looms combine to make precision wire cloth that meets the most rigid specifications. All shute wires are parallel and all warp wires are parallel as they must be, to assure a uniformly woven cloth with no defects. One or two open spots in a wire cloth could completely spoil the most painstaking screening operation.

In addition to its uniformity and freedom from imperfections, Newark Wire Cloth is noted for accurate mesh counts. Available in all the commercially used metals, Newark Wire Cloth is woven in sizes ranging from 4 inches (space cloth) down to 400 mesh.

We maintain a large stock of the commonly used metals and sizes, and are in a position to make prompt shipments. Let us quote on your requirements. When writing, please give us details on your process.

Send for our New Catalog E.

NEWARK ACCURACY

Newark Wire Cloth COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

If you write maker identify as **IEN - 4422**

T-S BALE BREAKER

CUSTOM-BUILT FOR EVERY BALE BREAKING PURPOSE

These powerful machines are alike in the way they apply power to make bale breaking an automatic machine operation.

They differ in feeds, material loosening mechanism and discharge features, to suit the requirements of various raw materials such as cotton linters, jute, straw, bagasse, etc.

Let us know what raw materials you receive in bale form. We will tell you about the Taylor Stiles Bale Breaker to open the bales faster and automatically.

TAYLOR, STILES AND COMPANY

44 BRIDGE STREET RIEGELSVILLE, NEW JERSEY

If you write maker identify as **IEN - 4423**

As proved in thousands of installations, Sprague Power Factor Capacitors installed *right at each piece of inductive electrical equipment* insure maximum power cost savings, guarantee maximum cost-saving flexibility for future moves and expansion. Power factor on each piece of equipment is corrected *to the maximum*. Changes or additions can be made as *they are required*. New wiring, new switch gear, new transformers can be avoided. *Existing electrical circuits can handle bigger loads.*

Write for 28-page POWER FACTOR CORRECTION GUIDE
SPRAGUE ELECTRIC COMPANY, North Adams, Mass.

SPRAGUE POWER FACTOR CAPACITORS

If you write maker identify as **IEN - 4424**

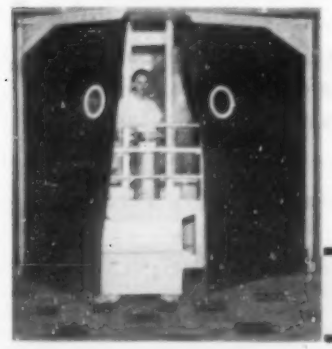
The door that can TAKE it . . . because it GIVES

CANDOR FLEXIBLE RUBBER DOORS

RADICALLY DIFFERENT from any other type of door.

PUT AN END TO REPAIRS

Now in operation in many plants in openings between manufacturing departments, loading docks, cold storage rooms (flapper doors), material distributing areas (bumper doors), vestibules, etc. ALL SIZES up to 10' x 10'



Flexible rubber sheets in sturdy steel frames, double-acting spring hinges — allow passage of loaded lift-trucks, with no damage or delay

CAN BE ENGINEERED TO MEET YOUR SPECIAL REQUIREMENTS

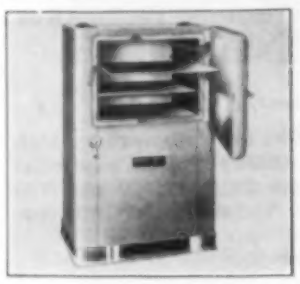
Ask for descriptive literature and data sheet

CANDOR ENGINEERING CO.
P. O. Box 210-A, Montclair, N. J.

If you write maker identify as **IEN - 4425**

HEATING . . Electric oven for laboratories, circulates air to 520° F.

Source: LABLINE INCORPORATED
215-19 N. Desplaines St., Chicago 6, Ill.



Bulletin 3700

Bench-Saver designates this new floor model electric oven. It is equipped with Inconel electric elements, dual door gaskets made of silicone, stainless steel interior, hammerloid silver gray exterior. The assembly includes a motor driven blower to circulate air through the working chamber where it is directed by a series of baffled perforated walls. Air velocity can be regulated between 75 and 200 cfm. Temperature is controlled by a hydraulically operated stainless steel thermostat. The back of the oven is removable for interior inspection and maintenance.

If you write maker identify as **IEN - 4426**

LUBRICATING . . Clear liquid stops work sticking in plastic molds

Source: VIN-ROCK INCORPORATED
8211 Almira Ave., Dept. IEN, Cleveland 2, Ohio

Particularly for injection molding

Type V-1 is a new clear liquid lubricant for spray or brush application to produce a hard smooth glossy surface in plastic molds. One of the ingredients in Vinium, a combination of chemicals developed by the company. The lubricant can be used for polystyrene products, acrylics, vinyls, nylon, certain rubbers and also for metal die castings. It will not stain the work and has no effect on paintability after the parts have been molded.

The new liquid is a companion product to Vin-Rock R-2 for compression molding, laminating, casting and reinforced plastics. Packaging is in pressurized 12-oz. spray cans and in quarts to 55-gallon bulk containers.

If you write maker identify as **IEN - 4427**

SWITCH . . Lead-plated box for safety switches, circuit breakers

Source: TRUMBULL COMPONENTS DEPARTMENT
41 Woodford Ave., Dept. IEN, Plainville, Conn.

Installs readily

New enclosure, in which lead plated sheet steel takes the place of cast iron, is available for applications where humid, dust laden and corrosive atmospheres attack an unprotected steel enclosure. The inert lead coating resists the corrosive effect of acids, alkalis, salt spray. The assembly is lighter than cast iron. It is suited particularly for outdoor use.

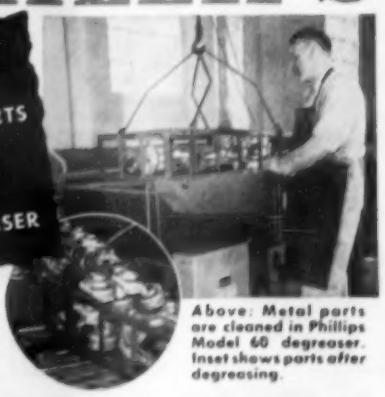
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4428**

ENGINEERED SERVICE

PHILLIPS

POWER TOOL MANUFACTURER CLEANS METAL PARTS BETTER, FASTER WITH A PHILLIPS DEGREASER



Skilsaw reports improved cleaning before painting and assembly.

Above: Metal parts are cleaned in Phillips Model 60 degreaser. Inset shows parts after degreasing.

HERE is another case illustrating the high cleaning efficiency of Phillips degreasers. Skilsaw, Inc., Chicago, uses a Phillips Model 60 electric batch-type machine to clean both aluminum and iron castings, steel stampings, shafts and screw machine parts before painting and assembly of the finished product.

Skilsaw reports that the Phillips unit cleans their parts better, as well as 3 to 4 times faster than their former method.

Check into the time and money you can save with Phillips Vapor Degreasing. Our representative will be glad to discuss your parts cleaning problem with you.

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN!

Phillips 3461 Touhy Avenue • Chicago 45, Illinois
MANUFACTURING COMPANY
Vapor Degreasers • Solvents • Parts Washers

If you write maker identify as **IEN - 4429**

Barcol®

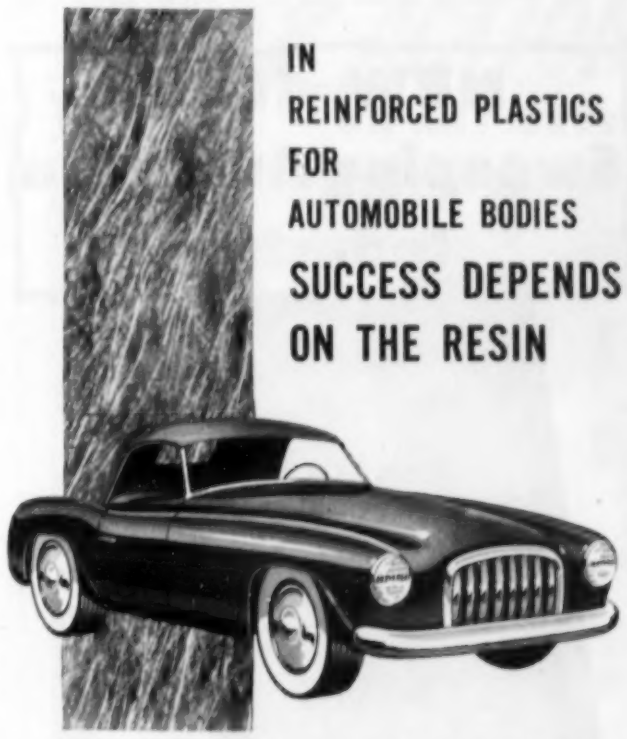
Door Operators

with timesaver pull switch

Always a timesaver, often a heat saver too! Pull switches on Barcol door operators keep traffic moving, keep costs down. Also available with radio control which truck operators can actuate while in motion. Barber-Colman also makes operators for swinging or sliding doors and sliding gates. Your Barcol distributor sells, installs, guarantees, and services—look under "Doors" in phone book.

BARBER-COLMAN COMPANY, DEPT. V44, ROCKFORD, ILLINOIS

If you write maker identify as **IEN - 4430**



IN REINFORCED PLASTICS FOR AUTOMOBILE BODIES SUCCESS DEPENDS ON THE RESIN

Designers and fabricators who are studying the application of reinforced plastics to automobiles, trucks, and trailers are advancing in a virtually new industry. They are finding BAKELITE Company an important ally in making the best use of these new materials.

Eleven BAKELITE Polyester Resins are available to meet the varied demands made on reinforced plastics for structural applications. For example, resin BRS-136 imparts exceptional toughness and resistance to impact. Another type, BRS-147, provides outstanding surface finish.

Basically, all reinforced plastics made with BAKELITE Polyester Resins have these important properties:

- **Corrosion resistance**
- **A high strength-weight ratio**
- **Ease of fabrication into large structures**
- **Insulation—both thermal and electrical**
- **Economy due to low-cost tooling, handling ease, and long service life**

The wide variety of BAKELITE Polyester Resins means that reinforced plastics can be closely tailored to the job. To assure success even further, the extensive research and engineering facilities of BAKELITE Company are at the service of both designer and fabricator.

A free booklet giving information about the forms, properties, and uses of BAKELITE Polyester Resins for reinforced plastics is now available. To get your copy, write Dept. **UI-14 today.**

BAKELITE
TRADE-MARK
POLYESTER RESINS
TRADE MARK

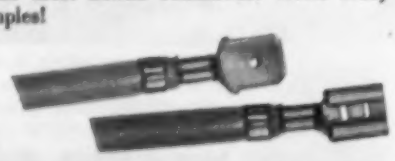
BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada: Bakelite Company
Division of Union Carbide Canada Limited
Belleville, Ontario

If you write maker identify as IEN - 4432

are Sweeping the Electrical Industry!

More and more manufacturers are getting into the swing to AMP FASTON connectors! Timers, clocks, switches, outlets, controls—all types of electrical components when equipped with AMP FASTON tabs not only *cost less* to produce, but offer all the advantages of easier, faster wiring on the line. To install, simply push FASTON on its mating tab. Wiring is accomplished in a fraction of the time required for screw-type terminal posts!

Triple spring action and wide wiping contact of AMP FASTON provides excellent electrical connection. U.L. approved, patented, AMP F CRIMP is voidless—gives high tensile strength and resists corrosion even under most humid conditions. Write today for information and samples!



Aircraft-Marine Products, Inc.
2100 Paxton Street, Harrisburg, Pennsylvania

If you write maker identify as IEN - 4433

NEW IDEA Sweeping American Industry

SBS WATERLESS WASH-STATION "Brings the Washroom to the Worker"

SBS Waterless Washstation Can Cut Costs, Save Money For You

American industry has a "new look" . . . along production lines . . . in critical trouble spots . . . wherever hard-to-remove industrial soils exist . . . you'll see SBS Waterless Washstations using famous SBS-30 Waterless Skin Cleanser. Proved by 6 years industrial usage, SBS-30 is unchallenged in its ability to SAFELY remove embedded grease, grime, paint, asphalt and most other stubborn soils — WITHOUT WATER.

Its safety has won the approval of some of the largest industrial hygiene and medical departments. Companies whose names you'd recognize immediately have had conclusive proof of the money-saving, production-increasing abilities of SBS Waterless Washstations. Find out the story for yourself, send for complete details.

SBS SUGAR BEET PRODUCTS CO. SAGINAW, MICHIGAN

Sugar Beet Products Co., Saginaw 8, Michigan
SEND details on the new SBS Waterless Washstation.

Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____

NEW LITERATURE

If you write maker identify as IEN - 0304

ABRASIVES . . Metal shot and grit for blast cleaning and shot peening. How to select it by type and metal, along with a consumption chart, are in 12-page "Blastrite" Catalog AB-53. Abrasive Shot & Grit Co., Dept. IEN, Springville, N. Y.

If you write maker identify as IEN - 0305

MAGNETIC AMPLIFIERS . . Two new types, one for high gain, one for high power to 45 kw. three phase, have essential information tabulated in data pages Bulletin 2500 and 2700 respectively. Vickers Electric Div., Vickers Inc., 1815 Locust St., Dept. IEN, St. Louis 3, Mo.

If you write maker identify as IEN - 0306

BALANCING . . How balancing machines work, principles and problems involved, description of the company's static single-plane balancing machine for test or production work. "Precision Balancing," 20 pages. Micro-Poise Engineering & Sales Co., 14851 Grand River, Dept. IEN, Detroit 27, Mich.

If you write maker identify as IEN - 0307

BEARINGS . . Oilite self-lubricating bronze bearings are made by powder metallurgy. Bulletin S-53, 28 pages, gives dimensions on some 700 standard sizes, load capacities, tolerances and press-fit data. Amplex Div., Chrysler Corp., Box 2718, Dept. IEN, Detroit 31, Mich.

If you write maker identify as IEN - 0308

BENDING . . Air-operated machine to bend bar, tube, pipe, flat stock also can be equipped to do rod shearing, sheet punching and shearing. "Big Brother," 4 pages. J. A. Richards Co., 907 N. Pitcher St., Dept. IEN, Kalamazoo, Mich.

If you write maker identify as IEN - 0309

BENDING . . Press brake has 6-ft. capacity in 14-gage steel and 8-ft. capacity in 16-gage steel. Drawings of 26 standard styles of press-brake dies are a feature of new 4-page catalog, "Press Brakes." Service Machine Co., 200 Miller St., Dept. IEN, Elizabeth, N. J.

If you write maker identify as IEN - 0310

ELECTRIC CABLE . . Rubber-jacketed cord for portable tools and electric appliances, service entrance cable for buildings, telephone wire, cord sets, heater cords, military cords. 1954 Catalog, 18 looseleaf sheets. Diamond Wire and Cable Co., 445 Park Ave., Dept. IEN, Sycamore, Ill.

If you write maker identify as IEN - 0311

INVESTMENT CASTINGS . . Made to specification in sizes to 2 oz. maximum and in non-machinable alloys, most steels, beryllium copper. Examples to show scope of company's service are in 8-page Bulletin VR-470. Vascoloy-Ramet Corp., 800 S. Market St., Dept. IEN, Waukegan, Ill.

If you write maker identify as IEN - 0312

CHEMICALS . . Catalog of some 300 pages lists laboratory chemicals by name, structural formula, molecular weight, melting point or boiling point. It covers 7,344 chemicals. Ask for Catalog 115-C. Fisher Scientific Co., 717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4435

A PAID NEWS ADVERTISEMENT BY HYPRO ENGINEERING, INC.

PORTABLE PUMP . . With Vacuum Switch Eliminates "Burn Out"!

New HYPRO Portable Pump with VAC-ON Vacuum Switch!

A new Portable Pump for industrial, farm, marine and home use has now been introduced by HYPRO ENGINEERING, INC., Minneapolis pump manufacturers. Weighing only 27 lbs., the HYPRO Portable Pump incorporates a special, low-cost vacuum switch that automatically stops the motor when the liquid supply runs dry. Danger of burnt out impellers is eliminated. The pump may be operated untended and will shut off automatically when the pumping job is finished.

Design of the HYPRO unit eliminates need for base plate or special coupling between pump and motor. The pump has a hollow shaft that slips directly onto the motor shaft. It will lift water up to 10 feet unprimed, 22 feet primed, and has a capacity of up to 5 gallons per minute with pressures up to 30 lbs.

Motor for the HYPRO Portable Pump is a ¼ H.P., 110-volt, heavy-duty capacitor type with overload protector and 5-foot cord. The pump has outside threaded ports to accommodate standard garden hose couplings and a hinged carrying handle for portability. It will handle liquids ranging in viscosity from alcohol to syrups.

For complete information on the HYPRO Portable Pump with Vacuum Switch, write Dept. 103, HYPRO ENGINEERING, INC., 404 No. Washington Ave., Minneapolis 1, Minn.

If you write maker identify as IEN - 0313

HOSE CLAMPS . . Nineteen application ideas, some of them having nothing to do with hose, have been published in 24-page pocket Bulletin F-280-1 on ways to use the company's Punch-Lok strap clamp from brooms to tank bands. Punch-Lok Co., 321 N. Justine St., Dept. IEN, Chicago 7, Ill.

If you write maker identify as IEN - 0314

PARTS CLEANING . . Detergent solution in a tank is heated and agitated to wash, degrease, strip metal parts. Five machines in 4-page Turbo-Blast bulletin have capacity of 350 to 2,300 gallons. Storm-Vulcan Inc., 2225 Burbank St., Dept. IEN, Dallas 19, Texas

If you write maker identify as IEN - 0315

VACUUM CLEANING . . Stationary equipment will help you keep your plant clean by removing the dust. How to use it in plant housekeeping, and a review of essential components, in 12-page Bulletin A-939. U. S. Hoffman Machinery Corp., 105 Fourth Ave., Dept. IEN, New York 3, N. Y.

If you write maker identify as IEN - 0316

CONDUIT . . Transite asbestos-cement duct forms a strong permanent fireproof nonconducting conduit for electrical conductors. It comes in two types, one for exposed and underground work, the other for installation in concrete. Bulletin EL-29A, 12 pages, gives details. Johns-Manville, 22 E. 40th St., Dept. IEN, New York 16, N. Y.

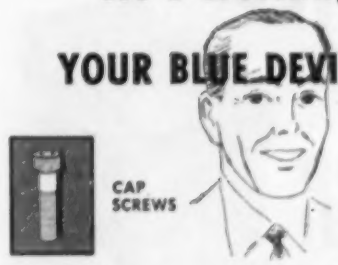
If you write maker identify as IEN - 0317

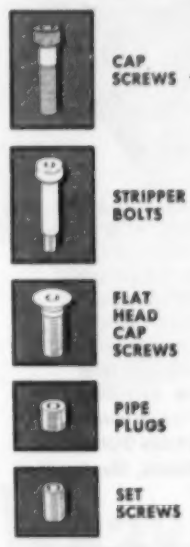
LIQUID LEVEL CONTROL . . Twelve methods in 24-page Bulletin 1160 range from ball float to gamma-ray detector. Each is described with the aid of a simplified schematic diagram and a note on instruments. Minneapolis-Honeywell Regulator Co., Wayne & Windrim, Dept. IEN, Philadelphia 44, Pa.

If you write maker identify as IEN - 4436

Not on Your Payroll . . . But He's Working for You!

YOUR BLUE DEVIL SOCKET SCREW DISTRIBUTOR





The Industrial Distributor in your area who stocks Blue Devil Socket Screws is working for you just as surely as if he was punching your time clock!

By maintaining an adequate and properly balanced inventory of these precision made products at all times, he makes sure you get them when you need them—in the exact sizes, styles and quantities you require.

Remember your Blue Devil Distributor next time you need socket head products; you'll be mighty glad you did!

Actual cross-section diagram shows how cold forming of Blue Devil socket head insures unimpaired fiber continuity.

SOCKET SCREWS EXCLUSIVELY!

SAFETY SOCKET SCREW COMPANY
6508 Avondale Avenue, Chicago 31, Illinois

SOLD ONLY THROUGH AUTHORIZED DISTRIBUTORS

If you write maker identify as IEN - 4437

MELRATH GASKETS

DRUM PLUG GASKETS

Made from any desired material or combination of materials. Resilient — tightened with little torque — remain tight under all temperature changes. For gasoline, kerosene, benzol, alcohol, fuel oil, lubricating oil, paraffine, paint, lacquer, dye, chemicals, etc.

There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

If you write maker identify as **IEN - 0318**

MATERIAL LEVEL CONTROL . . Diaphragm-operated switch mounts in a bin wall so bulk material level actuates it by rise or fall. 1954 Catalog, 20 pages, gives a number of schematic circuit diagrams for application. Bin-Dicator Co., 13946-93 Kercheval Ave., Dept. IEN, Detroit 15, Mich.

If you write maker identify as **IEN - 0319**

PROCESS CONTROL . . Wheelco instruments for industrial process control include recorders, controllers, indicators. Condensed Catalog F-5633-1, 4 pages, reviews them. Barber-Colman Co., 1300 Rock St., Dept. IEN, Rockford, Ill.

If you write maker identify as **IEN - 0320**

PROCESS CONTROL . . Differential pressure transmitter to use as the primary element with other of the company's Autronic control instruments. It produces a 60-cycle output signal proportional to the variable being measured. Details in 4-page Bulletin A-707-A. Swartwout Co., 18521 Euclid Ave., Dept. IEN, Cleveland 12, Ohio

If you write maker identify as **IEN - 0321**

TEMPERATURE CONTROLS . . Instruments for furnaces, ovens, dryers and kilns include indicating and recording models of thermometers and pyrometers, together with control valves. Bulletin P-1260, 48 pages, includes list prices. Bristol Co., 107 Bristol Road, Dept. IEN, Waterbury 20, Conn.

If you write maker identify as **IEN - 0322**

TEMPERATURE CONTROL . . Resistance-thermometer recorder to 500 deg. F. operates on a null-balance principle from ac. supply. Bulletin F-451, 8 pages. Fielden Instrument Div., 2920 N. 4th St., Dept. IEN, Philadelphia 33, Pa.

If you write maker identify as **IEN - 4438**

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 0323**

CONVEYOR BELTS . . Fabric-reinforced cleats are vulcanized into the body of the company's Sani-Cleat belt. This is one of several food-products conveyor belts in new 4-page "Belting" bulletin. A. J. Sparks & Co., 860 Grandville Ave., Dept. IEN, Grand Rapids, Mich.

If you write maker identify as **IEN - 0324**

CONVEYOR CHAIN . . Strength and resistance to abrasion and corrosion are properties of chain made from the company's Z-Metal, a heat-treated ferrous alloy. Bulletin 53-56, 12 pages, covers pintle, roller, other types. Chain Belt Co., 4703 W. Greenfield Ave., Dept. IEN, Milwaukee 1, Wis.

If you write maker identify as **IEN - 0325**

CONVEYOR CHAIN . . Kenkrome manganese steel conveyor chain resists wear and abrasion. Types include bar, pintle, rivetless, detachable-link, drag, roller. Bulletin 1053. 12 pages. Kensington Steel Co., 505 E. Kensington Ave., Dept. IEN, Chicago 28, Ill.

If you write maker identify as **IEN - 0326**

CRANES . . Portable shop crane employs a double-action hand hydraulic pump to lift ½ to 3 ton, depending on model. 1954 Catalog, 8 pages, letterhead request. Ruger Equipment, Inc., 615 W. 4th St., Dept. IEN, Uhrichsville, Ohio

If you write maker identify as **IEN - 0327**

POWER CYLINDERS . . Series J for oil hydraulic service is rated to 2,000 lb. and has end caps secured to the body by bolts for a clean appearance. Bulletin 53, 8 pages. Hydro-Line Mfg. Co., Dept. IEN, 5615 Pike Rd., Rockford, Ill.

If you write maker identify as **IEN - 0328**

DRIVE BELTS . . Eight types of flat transmission belts in rubber-fabric construction are described by condensed data summaries in 4-page "Transmission Belting." Quaker Rubber Corp., Div. H. K. Porter Co., Comly & Tacony Sts., Dept. IEN, Philadelphia 24, Pa.

If you write maker identify as **IEN - 0329**

DRIVE BELTS . . Super-Power V-belts combine synthetic fibers and synthetic rubber into a strong oilproof assembly that resists sag in the sheave groove. List prices on units for multiple-groove service in 4-page Folder 6628. Raybestos-Manhattan Inc., 61 Willett St., Dept. IEN, Passaic, N. J.

If you write maker identify as **IEN - 0330**

DRIVE SHEAVES . . Malleable split taper compression bushing enables you to mount the company's sheave with a wrench or to remove it by threading the cap screws into a set of push-off holes. "Gripbelt" pocket booklet, 24 pages. Browning Mfg. Co., 16 Chester St., Dept. IEN, Maysville, Ky.

If you write maker identify as **IEN - 0331**

DRILLING . . Sensitive machine for small holes, .004 to .250 in., with belt drive by a ⅙-hp. motor. Standard design and multiple assemblies in 4-page Bulletin AM-54. Hamilton Tool Co., 905 Hanover St., Dept. IEN, Hamilton, Ohio

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as **IEN - 4440**

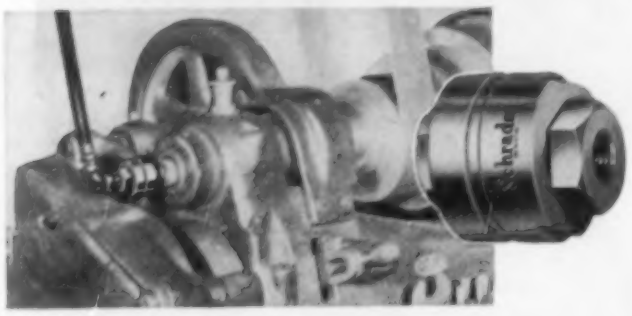
If you write maker identify as **IEN - 4441**

If you write maker identify as **IEN - 4442**

If you write maker identify as **IEN - 4443**

If you write maker identify as IEN - 4444

TRANSMITS AIR PRESSURE THROUGH ROTATING PARTS



Where it is necessary to transmit line pressure or partial vacuum from a rotating member to a fixed unit, you will find **Schrader Rotating Pressure Joints** the answer. These compact, air-tight units handle a variety of gases, liquids, as well as compressed air. Free rotating action on one side is possible while the line connections on the other side are in a fixed position. Ball bearing construction assures a minimum of rotating friction. They measure 2½" in overall length. Available with ¼" and ⅜" N.P.T. threads.

Write today for your copy of the Schrader catalog, which contains full description.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated

458 Vanderbilt Avenue, Dept. D-32, Brooklyn 38, N. Y.

If you write maker identify as IEN - 4445

SAFE ARRIVAL—They used

WESTCOAT-CLEAR

***TRANSPARENT* Strip Coating**

Shipments arrive at destination free from rust, corrosion, abrasion, contamination and tampering when *sealed in* WESTCOAT-CLEAR 202. It's the new quick-dip fast-setting coating that saves money, time and cuts costs. WESTCOAT'S transparency makes all product identification easy . . . at all times . . . in all kinds of weather. It's extremely tough, gives positive protection; coated parts withstand 1,000 hours, 100° relative humidity at 100° F without rusting. Easy depreservation—slit coating, peel and part is ready for use. WESTCOAT is economical—remelt and reuse over and over.

Find out how WESTCOAT-CLEAR 202 can eliminate your packaging headaches—simplifies shipments and storage of spare parts, gauges and tools—saves time and money. Spend pennies and save dollars.

WESTERN COATING COMPANY

Eastern Plant—P. O. Box 227, Elyria, Ohio
Western Plant—85 West Union Street, Pasadena 1, California
Representatives in principal cities

PROTECT WITH WESTCOAT

SEND COUPON TODAY FOR WESTERN COATING LITERATURE

NAME & COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

NEW LITERATURE—*Continued*

If you write maker identify as IEN - 0332

DRYING . . Combination dehumidifier and filter for compressed air handles 25 to 200 cfm. free air for corresponding compressor size of 3 to 30 hp. "Vi-Speed" bulletin, 4 pages, shows how it works in step-by-step sequence. Van Products Co., 3783 W. 12th St., Lakewood, Erie, Pa.

If you write maker identify as IEN - 0333

DUST COLLECTING . . Type CN is a cloth-bag dust collector supplied as a unit ready to place. It comes in seven sizes with cloth area of 200 to 1,000 sq. ft. A mechanical shaker removes accumulated dust at intervals. Bulletin 916, 4 pages. Pangborn Corp., Dept. IEN, Hagerstown, Md.

If you write maker identify as IEN - 0334

DYNAMOMETERS . . Eddy-current principle is employed as basis for a line of absorption and motoring dynamometers from small to thousands of horsepower. Bulletin DB-1, 16 pages, discusses trunnion mounting, torque and speed measurement, cooling, special designs. Eaton Mfg. Co., Dynamatic Div., 3300 14th Ave., Dept. IEN, Kenosha, Wis.

If you write maker identify as IEN - 0335

ELEVATORS . . Workers stand on steps attached to a vertical belt, hold on with hand grips, travel up or down between floors quickly with no ladder climbing. Bulletin HB-54, 8 pages. Humphrey Elevator Co., Dept. IEN, Faribault, Minn.

If you write maker identify as IEN - 0336

ELEVATORS . . Adjustable ramp for a loading dock, in one design, moves up or down to match truck floor level. A second design raises or lowers the truck to match the dock level. Bulletin 1-169-54, 4 pages. Rowe Methods Inc., 2534 Detroit Ave., Dept. IEN, Cleveland 13, Ohio

If you write maker identify as IEN - 0337

EXPANDING . . Pneumatic tool expands tube into sheet, as in a boiler or condenser, under electric control to produce uniform joints without a skilled operator. How it works is told in 8-page Bulletin P-318. Crane Packing Co., 1815 Cuyler Ave., Dept. IEN, Chicago 13, Ill.

If you write maker identify as IEN - 0338

FIRE EXTINGUISHING . . Automatic sprinkler equipment in overhead, sidewall, fog and carbon-dioxide types are summarized in 8-page Bulletin 2426. Blaw-Knox Co., 829 Beaver Ave., Dept. IEN, Pittsburgh 33, Pa.

If you write maker identify as IEN - 0339

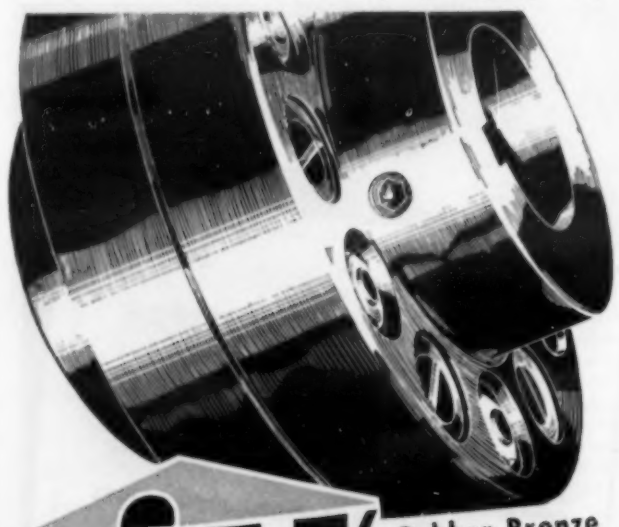
FIRE EXTINGUISHING . . Hose nozzles, fittings, flow-regulating valves, hose cabinets, hose, protective clothing. "Accessory Catalog," 66 pages, letterhead request. Fyr-Fyter Co., 221 Crane St., Dept. IEN, Dayton 1, Ohio

If you write maker identify as IEN - 0340

FABRICATING . . Formed steel channel assembles with fittings and fastenings into racks, framing, conduit supports, fixture hangers. How to make your own structures is described in 12-page Catalog 253 along with strength data. Flexa Steel Products, Inc., 17 N. May St., Dept. IEN, Chicago 7, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4447



AJAX Rubber-Bronze Bushed **flexible couplings**

standard for 33 years

● Design engineers approve Ajax Flexible Couplings for protecting bearings, armatures, rotors and other vital, expensive parts. Hundreds of thousands in use. *Ajax knows couplings.* Write for new Catalog No. 55.

AJAX FLEXIBLE COUPLING CO. INC. • WESTFIELD, N. Y.

If you write maker identify as IEN - 0341

FABRICATING . . Contract service makes process vessels, power piping, condensers, tanks, panel boards to order. Facilities for plate fabrication, cutting, forming, welding, are summarized in 4-page File Folder. Gussett Boiler & Welding Inc., 1545 Whipple Rd., Dept. IEN, Canton 10, Ohio

If you write maker identify as IEN - 0342

COATED FABRICS . . Buna-N coated nylon, neoprene-coated cotton, neoprene-coated Fiberglas, are among the industrial fabrics in new 6-sheet "Coated Fabrics Catalog" which gives properties and uses. Letterhead request. Haartz-Mason Inc., 268 Pleasant St., Dept. IEN, Watertown 72, Mass.

If you write maker identify as IEN - 0343

COOLANT FILTER . . Delpark traveling-web continuous filter in models to remove grit and chips from coolant in Cincinnati centerless and chucking grinding machines. Folder, "Delpark-Cincinnati," 4 pages, has a recommendation chart. Industrial Filtration Co., Dept. C-195, Lebanon, Ind.

If you write maker identify as IEN - 0344

FOUNDRY EQUIPMENT . . Illustrated summary on a line of equipment to mechanize ferrous and non-ferrous foundries includes seven layout drawings and data on sand-preparation, mold, core, casting units. Book 2423, 44 pages. Link-Belt Co., 307 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.

If you write maker identify as IEN - 0345

ELECTRIC FURNACES . . Control to 3 deg. F. in a range to 2,300 deg. F. is a feature of heat treating furnace. It has a pyrometer, two thermocouples, and a Cyber-Tac automatic control. Bulletin, "Dyna-Trol," shows time-temperature curve examples. L & L Mfg. Co., Dept. IEN, Chester, Pa.

If you write maker identify as IEN - 4448

"SHADE"

Remarkable Vinylite Sheeting that ABSORBS Heat and Glare

SHADE will never become brittle or crack even in temperatures from −25 to 150 F. All you need is a squeegee, a bucket of water, and some pieces of factory pre-cut SHADE to eliminate glare and heat. Easy to apply, permanent and washable. SHADE is custom cut to fit your windows—Order your today!

The unfiltered rays of the sun, even on a cloudy day, can be a major cause of fatigue. SHADE is a specially formulated compound to filter light!

NO MORE PAINTING
No need for repeated painting of glass surfaces: with SHADE you have an easily applied filter, bonded to the glass. It won't crack or grow brittle.

EASY TO APPLY
Application requires no special skill or tools. It is pre-cut at the factory. Wet, place polished side to glass, squeegee out excess water.

PERMANENT
Following out this procedure will effect a permanent bond. SHADE will never come off until you pry up a corner and strip it off yourself.

WASHABLE
Can be washed like regular glass. If you wish to remove it, a quick washing in warm water will restore its adhesiveness.

COLOR CHOICES
Colors are available in FROSTED TRANSLUCENT, ARCHITECTURAL BLUE, FILTERED WHITE, OLIVE GREEN, TRANSLUCENT GREEN, BLACKOUT BLACK, & TRANSPARENT BLUE

TRANSEAL, Ltd.

PLainfield 6-3800

Dept. IEN, 102 Oak Tree Avenue
SOUTH PLAINFIELD • NEW JERSEY

If you write maker identify as IEN - 4449

Speed Way Speed Sander

Motor Driven 3/16" Orbital Motion

$34.50

Sands Cleans Smooths Polishes

Three 4½" x 6½" coverings cut from standard 9" x 11" abrasion sheet.

Makes a hundred tedious jobs fast and easy. Will sand to the bare wood or metal, featheredge, or smooth and polish to a "piano finish." Powerful direct-connect, 3450 r.p.m. 110 v., A.C. air-cooled motor. No gears, nor gear-housing to collect grit and dust. Sealed ball-bearing thruout. Cast-aluminum body and chrome plated—in hand weight only 5 lbs. Natural grip, all-position handle with sliding thumb switch and 3 wire rubber-covered cord.

WRITE FOR CIRCULAR

Speed Way MANUFACTURING CO.

1885 So. 52nd Avenue • Cicero 50, Illinois

If you write maker identify as **IEN - 0346**

GASKETS . . Quad-ring is a four-lipped rubber seal, approximately square in cross section, that resists spiral twist in hydraulic and pneumatic service. It applies similarly to an O-ring. "Quad-Rings," 6 pages. Minnesota Rubber & Gasket Co., 3630 Wooddale Ave., Dept. IEN, Minneapolis 16, Minn.

If you write maker identify as **IEN - 0347**

GRINDING ATTACHMENT . . Motor-driven unit holds cutters to grind form and radial relief, face on spiral flutes and cutting edges. "Model 500 Circularity Grinding Attachment," dated 1953 but just released. 12 pages. Detroit Reamer & Tool Co., 2830 E. 7-Mile Rd., Dept. IEN, Detroit 34, Mich.

If you write maker identify as **IEN - 0348**

HANDLING . . Crane-supported grab picks up a load, carries it about, releases it when set down, all by the crane operator. "Cranehand," 4 pages. American Forge & Mfg. Co., 818 Shore Ave., Dept. IEN, Pittsburgh 12, Pa.

If you write maker identify as **IEN - 0349**

HANDLING . . Half truck and half platform, the company's two-wheel two-leg skid is the basis for a standardized group of interchangeable platforms, trucks, boxes, racks to move about by hand or power. "Turner System," 28 pages. Factory Service Co., 4615 N. 21st, Dept. IEN, Milwaukee 9, Wis.

If you write maker identify as **IEN - 0350**

HEAT TREATING . . Vertical muffle furnace with controlled atmosphere for carburizing, cyaniding, hardening, annealing, drawing, in a range between 400 and 1,800 deg. F. Bulletin SC-165, 4 pages, shows a vertical cutaway section. Surface Combustion Corp., 2375 Dorr, Dept. IEN, Toledo 1, Ohio

If you write maker identify as **IEN - 4450**

XEROGRAPHY

AT BELL AIRCRAFT CORPORATION

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December 12, 1953 . . . Bell X-IA flies at record speed of 1650 miles per hour

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XEROGRAPHY

THE FASTEST, CHEAPEST, MOST VERSATILE WAY TO MAKE MASTERS FOR DUPLICATING.

XEROX

NEW LITERATURE—Continued

If you write maker identify as **IEN - 0351**

HEATING ELEMENTS . . How to heat pipe lines with Calrod tubular electric elements is described in 8-page Bulletin GEA-5095A along with calculation instructions. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y.

If you write maker identify as **IEN - 0352**

ELECTRIC HOISTS . . Quick-Lift is a chain hoist with 500 to 4,000-lb. capacity in 17 models. Bulletin QL, 6 pages, shows how to use it to power a freight elevator in addition to giving specifications and a sectional view. Coffing Hoist Co., 802 Walter St., Dept. IEN, Danville, Ill.

If you write maker identify as **IEN - 0353**

ELECTRIC HOISTS . . Hi-Lift design provides for maximum hook lift within the available headroom. It is made in 2 to 15-ton models. Bulletin H-112, 16 pages. Northern Engineering Works, 2615 Atwater St., Dept. IEN, Detroit 7, Mich.

If you write maker identify as **IEN - 0354**

HONING . . Microhoning machines finish cylindrical work from 1 to 100 microinches as required. Microflat machines produce optical flatness within one light band. Bulletin AR-124, 28 pages. Micromatic Hone Corp., 8100 Schoolcraft Road, Dept. IEN, Detroit 38, Mich.

If you write maker identify as **IEN - 0355**

HOSE . . Teflon-plastic liner and stainless-steel outer braid are combined in new Fluoroflex-T hose to withstand temperature to 450 deg. F., corrosion, pressure to 1,000 lb. Bulletin FH-1, 4 pages, reports results of 11 types of test. Resistoflex Corp., Dept. IEN, Belleville 9, N. J.

If you write maker identify as **IEN - 0356**

FLEXIBLE METAL HOSE . . Cobra seamless metal hose is offered in Monel Metal and nickel, in addition to stainless steel, bronze and steel, by 12-page Catalog 100. DK Mfg. Co., 4640 W. 54th St., Dept. IEN, Chicago 32, Ill.

If you write maker identify as **IEN - 0357**

INSULATING TAPES . . Ten selected types for construction and repair of electric motors have pressure-sensitive adhesive, standard and thermosetting. "Scotch Electrical Tapes," 12 pages, shows how to use them. Minnesota Mining & Mfg. Co., 900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

If you write maker identify as **IEN - 0358**

THERMAL INSULATION . . Insulating board made of wood fiber comes in six types to serve as structural insulation in products, sound baffles, veneer core stock. Design Data 79, 8 pages. Insulite Div., Minnesota & Ontario Paper Co., 500 Baker Arcade Bldg., Dept. IEN, Minneapolis 2, Minn.

If you write maker identify as **IEN - 0359**

VIBRATION ISOLATING . . Bonded-rubber mounts to isolate shock, vibration, noise. Seven load ratings range from 500 to 4,400 lb. per unit. Bulletin 538, 4 pages. Barry Corp., 838 Pleasant St., Dept. IEN, Watertown 72, Mass.

All Makers of These and All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4452**

Have you considered this AID for AUTOMATION?

CYCLO-MONITORS:

1. **PRE-SET** over a wide range of numbers. No tools required.
2. **COUNT** shaft revolutions, lever strokes or electric impulses.
3. **TRANSFER** a built-in single pole, double throw control switch.
4. **HOLD** switch in transferred position for a controlled interval.
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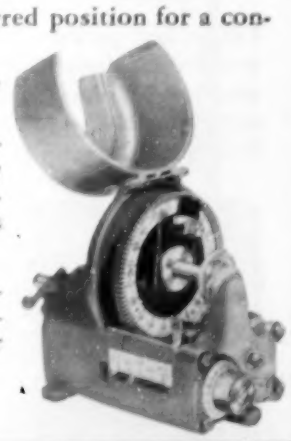
6. **REPEAT** automatically—with absolutely no interruption of the counting process. No lost counts or time lag.



CYCLO-MONITORS are available in many forms—including models arranged for your special requirements.

Write for Bulletin 202-1

COUNTER & CONTROL CORPORATION

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SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—
end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New-design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

Two-sizes—tapered or straight sides.

IMMEDIATE DELIVERY

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM

"Stacked and Still Accessible"

If you write maker identify as **IEN - 4454**

ALL-PURPOSE SLINGS

with new Roebling Tapered Sleeve Splice . . . stronger . . . cost less!

NEW ROEBLING All-Purpose Slings with the Tapered Sleeve Splice are delivered ready for the job. The unique rolled loops and tapered sleeve attachments develop full catalog strength of rope . . . cost less than ordinary tucked splices . . . save "splicing your own".

Made of Roebling "Blue Center" Steel Wire Rope, All-Purpose Slings are unsurpassed for toughness and dependability . . . flexible and easy to handle . . . come in all standard lengths and sizes. Send for full information and for the free "Sling Data Book." John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

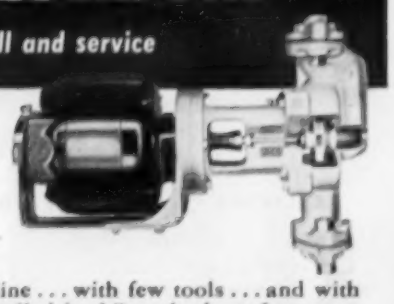
A subsidiary of The Colorado Fuel and Iron Corporation

ROEBLING

If you write maker identify as **IEN - 4455**

NEW DUNHAM CIRCULATORS

simple to install and service



You can quickly install this new, lightweight Dunham Circulator in any horizontal or vertical supply or return hot water line . . . with few tools . . . and with no fear of being "called back" to check performance.

Dunham Circulators have specially selected brand name motors that assure quiet, vibration-free pumping. Automatic overload protection is built in. Extra-large, wool-packed oil reservoir.

Dunham's single spring motor-pump coupling greatly simplifies servicing. Routine maintenance of carbon rotary seals can be easily handled in the field.

Standard and High Head Capacity Circulators fully cover most heating and/or cooling requirements.

WRITE FOR BULLETIN IEN-4

DUNHAM HEATING SYSTEMS AND EQUIPMENT

Quality First for Fifty-one Years

C. A. DUNHAM COMPANY, 400 W. Madison St., Chicago 6, Illinois

If you write maker identify as IEN - 4456

Get the most "coverage" for your money

GOLD SEAL
PLASTIC
Electrical Tape

Now . . . Gold Seal time-proved quality in Plastic Tape. Neat, thin wrapping gives all needed insulation on most jobs. Sticks fast — gives lasting protection — resists sunlight, water, oil solvents. Try it. Free sample on request. Jenkins Bros., Rubber Div., 100 Park Ave., New York 17.

JENKINS
Gold Seal Tape
FRICTION • RUBBER • PLASTIC
Single rolls, cellophane protected, and 10-roll Handy Pack cartons. Also Diamond Seal Friction and Rubber Tapes made to ASTM Specifications.

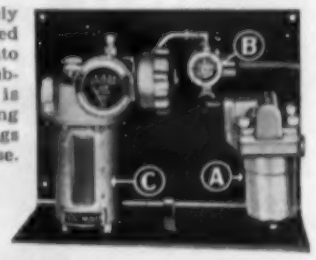
If you write maker identify as IEN - 4457

On a single rolling mill . . . also saves plenty in maintenance, lubrication time and lubricant!

Before Oil-Mist was installed on this rolling mill, temperatures ran high, expensive bearings were in danger. After Oil-Mist, temperatures dropped—so did the use of rolling coolant—$480 worth a month! Plus a saving of 24,000 gallons of preheated water a month—previously added when replacing coolant! Lubricant consumption fell from 15 or 20 *pounds* of grease *a* DAY to 2½ *gallons* of oil *a* WEEK! Lubrication time—a sixth of what it was.

Impressive? Sure, but Oil-Mist effects comparable savings on *any* machine.

Alemite Oil-Mist is a completely automatic, completely enclosed system which atomizes oil into mist—distributes it through tubing to bearings—where it is applied in a uniform, cooling coating. Suitable for bearings designed for either oil or grease.



A. Water Separator
B. Solenoid Control
C. Oil-Mist Lubricator

DELIVERS OIL TO BEARINGS THREE WAYS

Oil-Mist
For any type of anti-friction bearing—ball, roller or needle.

Oil-Mist Condensed
For plain bearings, slides, ways, vees, cams and rollers. Oil-Mist condensed to liquid.

Oil in Spray Form
Nozzle condenses mist—concentrates application. For open and enclosed gears and chains.

Free! the complete story on Alemite Oil-Mist and how it can be applied to ANY machine. Specifications, typical installations, case histories. Get yours now!

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Company
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City Zone State

NEW LITERATURE—Continued

If you write maker identify as IEN - 0360

LAPPING . . Centerless machine to lap bearings, shafts, cylindrical parts, gages to a 1½-microinch finish. Bulletin L-53, 4 pages, gives operating instructions. Size Control Co., 2500 W. Washington Blvd., Dept. IEN, Chicago 12, Ill.

If you write maker identify as IEN - 0361

FLUORESCENT LIGHTING . . Area illumination is stressed in new 8-page "Pony Catalog" which shows mechanical features of the company's fluorescent fixtures. Smithcraft Lighting, 233 Everett Ave., Dept. IEN, Chelsea 50, Mass.

If you write maker identify as IEN - 0362

LUBRICATING EQUIPMENT . . Automatic, for machinery from electronic calculators to six-color presses is reviewed in 4-page Bulletin NB-15. Bijur Lubricating Corp., 151 W. Passaic St., Dept. IEN, Rochelle Park, N. J.

If you write maker identify as IEN - 0363

LUBRICATING EQUIPMENT . . Automatic, to lubricate hydraulic machines, powered by takeoff from supply to a double-acting cylinder. Bulletin 514, 4 pages. Trabon Engineering Corp., 1814 E. 40th St., Dept. IEN, Cleveland 3, Ohio

If you write maker identify as IEN - 0364

LUBRICATING MATERIALS . . Eight silicone products to serve as mold release agents in plastic-molding operations. Seven-sheet Data 5-104 summarizes experience of leading users on acrylics, epoxies, phenolics, vinyls, polyesters, other silicones. Dow Corning Corp., Dept. IEN, Midland, Mich.

If you write maker identify as IEN - 0365

METAL SHAPES . . Roll-formed metal tubing and moulding including the company's "Tight-Butted" design are illustrated in section with dimensional notes in 28-page Catalog. Acme Tube Inc., 212 Coit St., Dept. IEN, Irvington 11, N. J.

If you write maker identify as IEN - 0366

METAL TREATING . . Material removes rust or tarnish from a metal surface, forms a phosphate coating on iron, steel, aluminum, zinc, cadmium to retard corrosion and promote paint adhesion. Bulletin, "Rustclean," 8 pages. Octagon Process Inc., 15 Bank St., Dept. IEN, Staten Island 1, N. Y.

If you write maker identify as IEN - 0367

ELECTRIC METER . . Volt-ohm-milliameter has sensitivity of 100,000 ohms per volt, achieved by using a rugged 10-micro-ampere movement. It has 33 ranges. Description in 4-page reprint bulletin, "Model 269 V. O. M." Simpson Electric Co., 5200 W. Kinzie St., Dept. IEN, Chicago 44, Ill.

If you write maker identify as IEN - 0368

MOTOR BRUSHES . . Service recommendations, information on physical characteristics, standard types and list prices. Catalog 38, 36 pages. Calebaugh Self Lubricating Carbon Co., 4637 Mulberry St., Dept. IEN, Philadelphia 24, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4459

Reach hard-to-get-at screws with
"YANKEE"
OFFSET RATCHET SCREWDRIVER

No. 3400

Fits in vest pocket—yet has the power of a full 8-inch screwdriver. Needs only an inch or so of clearance. Two sizes to drive slotted head screws. Wherever good tools are sold—or write for full particulars. "Yankee" Tools, 204 West Lehigh Avenue, Philadelphia 33, Pa.

No. 3600-9

HANDY PLASTIC KIT

for mechanics who need ratchet screwdriver to fit hollow head screws. Features No. 3600 handle with 8 hex key adapters ranging from 5/64" to 5/16".

STANLEY ®

"YANKEE" TOOLS
A Division of The Stanley Works

If you write maker identify as IEN - 0369

GEAR MOTORS . . Tri-clad design has output shaft speeds from 780 to 5.7 rpm. and ratings to 200 hp. Bulletin GEA-1437H reviews available types, enclosures, applications. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y.

If you write maker identify as IEN - 0370

NAME PLATES . . Cast bronze name plates to identify equipment and machinery or to furnish operating instructions. Examples in 4-page "Machinery Name Plates." Turner Brass Works, 821 Park Ave., Dept. IEN, Sycamore, Ill.

If you write maker identify as IEN - 0371

LABORATORY OVENS . . 92-page "Laboratory Apparatus" catalog on ovens, furniture, petroleum and other test equipment, temperature controls, other items. Labline Inc., 217 N. Desplaines St., Dept. IEN, Chicago 6, Ill.

If you write maker identify as IEN - 0372

PACKAGING EQUIPMENT . . Sewing machine to close small paper bags with a Dubl-Tape closure employs the company's Style 60000D head. Bulletin 100, 4 pages. Union Special Machine Co., 400 N. Franklin St., Dept. IEN, Chicago 10, Ill.

If you write maker identify as IEN - 0373

SPRAY PAINTING . . Water-wash spray booths, dry-type booths, automatic machines to paint small parts, exhaust fans and duct, turntables, lighting fixtures, compressors, guns, hose, tanks. Catalog G-54, 68 pages. M & E Mfg. Co., 2571 Winthrop Ave., Dept. IEN, Indianapolis 5, Ind.

If you write maker identify as IEN - 4460

SPEED UP HAMMER AND TOOL OPERATIONS

Uses 6.5 cubic feet of air per minute at 80 p.s.i. Delivers from 0 to 13,000 completely controllable blows per minute as a result of Superior's exclusive metering trigger.

38 Tools Available For 150 Different Jobs

Each tool designed specifically for use with the Bantam Bully. Blank shanks available for new applications in your particular field.

Scaling Tools	Star Drills
Flat Chisels	Sheet Metal Cutters
Routing Chisels	Shear Cutter
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4758 WARNER ROAD • CLEVELAND 25, OHIO

If you write maker identify as IEN - 4461

If your problem involves:

VULCANIZING RUBBER • DEGREASING METALS
BAKING VARNISH • HEAT TREATING LEATHER
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DRYING LACQUER, INK, PAINT, CERAMICS
GLASS, FIBRE, COMPOSITION OR IF YOUR PROBLEM REQUIRES CONTROLLED HEAT FOR OTHER APPLICATIONS.

And if you now use:

AIR DRYING • GAS, OIL OR ELECTRIC HEAT

You will be amazed by the increased quality control and big savings in money, time and labor when you use INFRALITE RADIANT HEAT.

WITHOUT OBLIGATION, ASK OUR REPRESENTATIVE TO CALL, OR WRITE FOR BULLETIN No. 54

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537 BERGEN ST., HARRISON, N. J.
HU 5-2323

If you write maker identify as **IEN - 0374**

ROTARY PIPE JOINT . . Ball-and-socket design is employed for the Phillips rotary joint to transfer steam or liquid into or out of rotary equipment. Sizes are stocked from ¼ to 3 inches. Bulletin, "Phillips Joint," 4 pages. Key Co., 2651 McCasland Ave., Dept. IEN, East St. Louis, Ill.

If you write maker identify as **IEN - 0375**

PLASTIC MATERIALS . . Laminated plastic sheet, rod, tube, and shapes are carried in stock or fabricated to order. Ryertex Bulletin 80-2, 16 pages, also describes plastic bearings, gives machining instructions. Joseph T. Ryerson & Son Inc., Box 8000-A, Dept. IEN, Chicago 80, Ill.

If you write maker identify as **IEN - 0376**

PLASTIC DISPERSIONS . . Vinyl-base fluid dispersions can be formed into fabric coatings, dipped articles, unsupported film, or kneaded and baked into tough, resilient products. Fifteen examples in 8-page Booklet VE. Bakelite Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

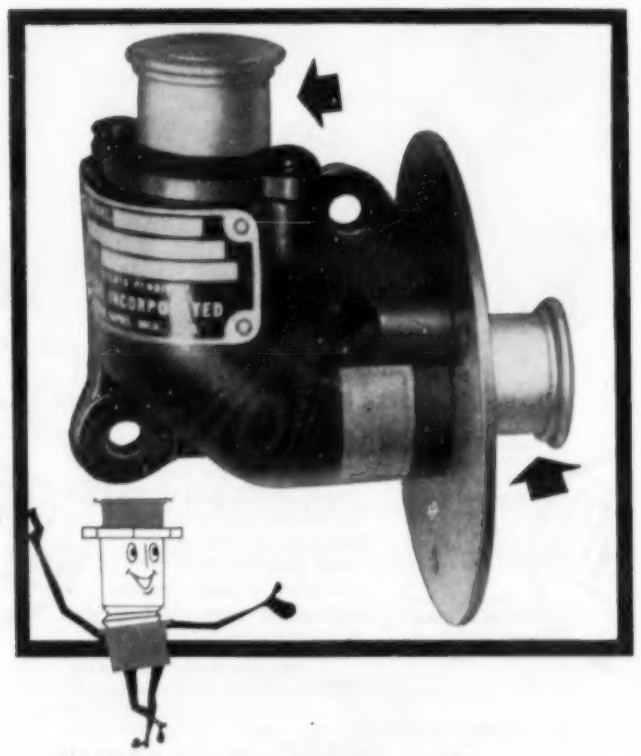
If you write maker identify as **IEN - 0377**

PLASTIC DISPERSIONS . . Plastisol converts from nonvolatile liquid to a solid. Application by dipping, casting, spreader coating, wiping, pressure forming, spraying, described in 12-page Bulletin 141. Chemical Products Corp., King Philip Road, Dept. IEN, East Providence, R. I.

If you write maker identify as **IEN - 0378**

POLISHING WHEELS . . Made of wool felt in nine densities to polish materials from aluminum to marble. Sizes, setup instructions, maintenance suggestions, bobs and mounted points in 12-page "Paramount Felt Products" catalog. Bacon Felt Co., W. Water St., Dept. IEN, Taunton, Mass.

If you write maker identify as **IEN - 4462**



easily-applied CaPlugs keep Lear couplings dust-free ...protect threads

Furnished for use as an engine super charger blower shift control, this Lear model 197T Power Unit is provided with cost-saving protection during shipment and storage. Covering output couplings are tough, dependable Type EC CaPlugs. *Not only is thread damage avoided but dust and dirt are sealed out.*

In stressing other CaPlug advantages, Lear, Inc. states, "They are much easier to install and consequently effect a considerable saving in installation man-hours."

Made of flexible Polyethylene and impervious to all common chemical reagents, acids and solvents, multi-purpose CaPlugs will not chip, break or shred under most severe conditions. Furnished in 4 standardized designs, they are promptly available in a wide range of sizes to meet a wide range of requirements.

Write for catalog, price lists and free CaPlug assortment.

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PROTECTIVE CLOSURES CO., INC.
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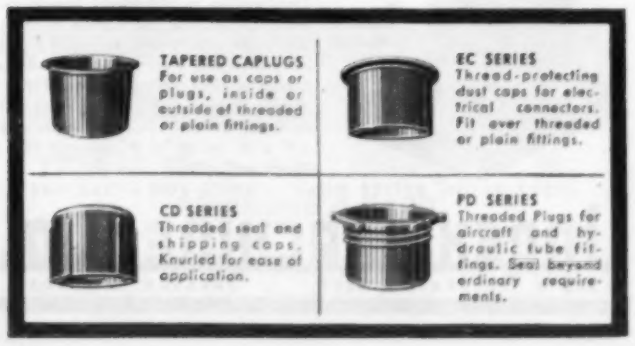

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 0379**

PRESS TOOLS . . Stock-size die sets in 1,728 combinations in all-steel or semi-steel construction, welded or threaded shanks. Bulletin 71, 4 pages, shows manufacture. Die Supply Co., 1400 Brookpark Road, Dept. IEN, Cleveland 9, Ohio

If you write maker identify as **IEN - 0380**

PRESS TOOLS . . Contract service for making dies, fixtures, special machinery. Its scope is shown in new 20-page brochure by illustrated facilities and product examples. Olofsson Tool & Die Co., 2727 Lyons, Dept. IEN, Lansing 2, Mich.

If you write maker identify as **IEN - 0381**

PROCESSING . . Floor-mounted direct-contact barometric condensers for food, chemical, process plants. A pump removes spent condensing water so no long barometric leg is required. Bulletin 9041, 4 pages, shows an internal schematic. Ingersoll-Rand Co., 746 Morris Ave., Dept. IEN, Phillipsburg, N. J.

If you write maker identify as **IEN - 0382**

PROCESSING . . Equipment for painting, enameling, metal cleaning and rust proofing, drying ovens, dust collectors, conveyors, specials. Catalog A-654, 12 pages. R. C. Mahon Co., P. O. Box 4666, Dept. IEN, Detroit 34, Mich.

If you write maker identify as **IEN - 0383**

PROTECTIVE HELMETS . . Shockguard is a safety work helmet to protect electrical workers against accidental high-voltage contact. It is tested at 10,000 volts, contains no metal parts. Bulletin 0607-1, 4 pages. Mine Safety Appliances Co., 201 N. Braddock Ave., Dept. IEN, Pittsburgh 8, Pa.

If you write maker identify as **IEN - 0384**

PYROMETER ACCESSORIES . . Thermocouple and extension wires with plastic, glass, asbestos insulation. Catalog Section 31, 8 pages, contains a table of resistances per foot for copper, iron, constantan, other alloys. Thermo Electric Co., Dept. IEN, Rochelle Park, N. J.

If you write maker identify as **IEN - 0385**

RELAY . . Time-delay relay, sealed aircraft type, is adjustable from .03 to 120 seconds. Delay is pneumatic. Contacts of Model-SF Agastat are rated at 5 amp., 28 volts dc. Bulletin SR-5, 4 pages. AGA Div., Elastic Stop Nut Corp., 1027 Newark Ave., Dept. IEN, Elizabeth, N. J.

If you write maker identify as **IEN - 0386**

RESISTORS . . Precision wire-wound units with 1 per cent standard tolerance, .5 to .05 per cent special, in resistance values from .1 ohm to 4 megohms for MIL-R-93-A specification. Bulletin D-1, 4 pages. International Resistance Co., 401 N. Broad St., Dept. IEN, Philadelphia 6, Pa.

If you write maker identify as **IEN - 0387**

RUBBER PRODUCTS . . Standard parts from stock molds include grommets, bushings, bumpers, suction cups, rings. Catalog M-77, copyright 1952 but recently revised, 20 pages. Miller Products Co., 29 Warren, Dept. IEN, New York 7, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4464**

If you write maker identify as **IEN - 4465**

If you write maker identify as **IEN - 4466**

Cut Costs with POWERS

No. 11 Self-Operating Temperature Regulators

Used by Leaders in Industry for
Water Heaters
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Heat Exchangers
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Metal Finishing Tanks and Machines
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Metal Parts Washers and Degreasers
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Jacket Cooling Water for Air Compressors Diesel and Gas Engines
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Cooking Vats
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They're Simple
Easy to Install
ACCURATE
Give many years of Reliable Service

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Skokie, Ill. • Offices in Over 50 Cities, see your phone book.
OVER 60 YEARS OF TEMPERATURE AND HUMIDITY CONTROL

If you write maker identify as IEN - 4468

Goodbye Elbow Grease!

Use HAND-I-HACK* Portable POWER HACK SAW

TAKE IT EASY—let electricity do your muscle work! Hand-I-Hack eliminates the sweat and fatigue of hack sawing. Plugs into any wall or light socket. Truly portable — can be carried anywhere with one hand. Has swivel vise — operates in any position: horizontally, vertically, at an angle, even upside down. Maximum capacity: 3" x 3" square cut. Uses lower cost standard 10" hand blades — will cut solid bar stock and thin wall tubing, pipe, conduit, cable, rolled forms, etc.

Cutting small diameter brass tubing, using wood block false jaws.

Making a square cut on solid 2" steel bar.

• Write for catalog and name of dealer

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Lipe-ROLLWAY CORPORATION
Manufacturers of Automotive Clutches and Machine Tools
812 Emerson Ave., Syracuse 1, N. Y.

If you write maker identify as IEN - 4469

O-M CYLINDERS (air • hydraulic)

O-M Cylinders require up to ⅓ LESS INSTALLATION SPACE than conventional Cylinders of the same bore because O-M's *Special, Interlocking Mechanism* eliminates projecting tie rods and bulky end caps. In addition, the "O.D." of O-M Cylinders can be easily and accurately machined for cartridge mounting within your equipment.

O-M Special Interlocking Mechanism also assures perfect alignment giving O-M the lowest coefficient of friction of any cylinder. Thus, O-M Cylinders are smoother operating at low or high speeds regardless of length of stroke. Easily removed, inspected, repaired, replaced. Completely interchangeable parts.

Available in a full range of sizes (1½" to 8" bores) with standard, 2 to 1 or oversize rods. *14-day delivery on most sizes.*

Write today for FREE catalog and complete set of ½- and ¼-scale templates showing all cylinders and mounting brackets.

MAIL COUPON TODAY!

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1208 150th Street • Hammond, Indiana
☐ Please send latest O-M catalog. ☐ Complete set of templates.
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Company.....
Address.....
City..... Zone..... State.....

NEW LITERATURE—Continued

If you write maker identify as IEN - 0388

SAWING MACHINE . . Metal-cutting band saw will handle 10-in. rounds and flats to 18 in. in width. It is supplied for wet or dry operation. Bulletin, "Model J," 4 pages. Johnson Mfg. Corp., Dept. IEN, Albion, Mich.

If you write maker identify as IEN - 0389

SEALING COMPONENTS . . Metal containers and hermetic-seal-bushing terminals for transformers and electronic units. Company offers standard units and assembly service. Bulletin, 4 pages. Heldor Mfg. Corp., 238 Lewis St., Dept. IEN, Paterson, N. J.

If you write maker identify as IEN - 0390

SEALING EQUIPMENT . . Castings are made pressure tight, plating on porous metal does not "freckle," bacteria cannot get a toehold on metal parts impregnated by Metaseal. Bulletin, 8 pages. American Metaseal Mfg. Corp., 607 65th St., Dept. IEN, West New York, N. J.

If you write maker identify as IEN - 0391

SEPARATING . . Vibrating-screen machine employs two rotating eccentric weights to vary screening action for wet or dry material, fine or coarse, heavy or light. Data File 106-40, 8 pages. Southwestern Engineering Co., 4800 Santa Fe Ave., Dept. IEN, Los Angeles 58, Calif.

If you write maker identify as IEN - 0392

SOLDERING . . Electric irons in 40 models from 25 to 700 watts and ⅛ to 1¾-in. tips, straight and hatchet designs, and a battery-operated iron. Catalog 106, 4 pages. Hexacon Electric Co., 155 W. Clay Ave., Dept. IEN, Roselle Park, N. J.

If you write maker identify as IEN - 0393

SOLENOIDS . . Four designs now are offered from stock with a choice of 12 sets of characteristics. Bulletin, "TT Type," 4 pages, shows performance curves. Soreng Products Corp., 9565 Soreng Ave., Dept. IEN, Schiller Park, Ill.

If you write maker identify as IEN - 0394

STEEL STRAPPING . . Sizes from ¾ to 2 in. are used for bundling pipe, reinforcing crates and loaded pallets. Equipment for applying, sealing, anchoring, cutting is shown in 8-page "Heavy Duty Strapping." Gerrard Steel Strapping Div., 2915 W. 47th St., Dept. IEN, Chicago 32, Ill.

If you write maker identify as IEN - 0395

SWITCHES . . Type-V snap-action switch is a compact design about the size of a postage stamp. Ratings and actuators are in 4-page Catalog 74. Micro Switch Div., Minneapolis-Honeywell Regulator Co., Dept. IEN, Freeport, Ill.

If you write maker identify as IEN - 0396

CONDUCTANCE TESTING . . Portable instrument measures electrical conductance of floors and equipment to determine if static charges will drain off. Hospital uses are described in 4-page Vibrotest Bulletin 2B. Associated Research Inc., 3762 W. Belmont Ave., Dept. IEN, Chicago 18, Ill.

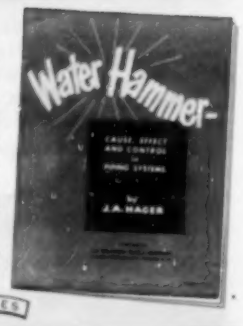
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4471

Eliminate Costly and Dangerous WATER HAMMER in your piping system *with*

WILLIAMS-HAGER FLANGED *Silent* CHECK VALVES

Yes . . . compact, durable and dependable Williams-Hager check valves will eliminate expensive and troublesome noise in *your* piping system. Available for standard pipe sizes from 1" to 20", they operate with maximum efficiency in horizontal, vertical or angular positions. Send for complete details.



Write for Bulletin 851 today!

CHECK VALVES

THE WILLIAMS GAUGE CO., INC.
2900 Pennsylvania Avenue, Pittsburgh 33, Pa.

If you write maker identify as IEN - 0397

ELECTRIC TESTING . . Portable equipment produces high current flow to test protective performance of circuit breakers, fuse links, overload relays. Catalog 154, 4 pages. Multi-Amp Corp., 10 Third St., Dept. IEN, Newark 7, N. J.

If you write maker identify as IEN - 0398

ELECTRONIC TESTING . . Direct-reading instruments to check transistors and semi-conductor devices, to measure noise figure, and to power them. Folder, 4 pages. Electronic Research Associates, Box 29, Dept. IEN, Caldwell, N. J.

If you write maker identify as IEN - 0399

EXPLOSION TESTING . . Welded steel chamber determines effect of explosions on equipment or determines if equipment will set off an explosive atmosphere, using butane gas. Bulletin, "Explosion Chambers," 4 pages. Tenney Engineering Inc., 26 Ave. B, Dept. IEN, Newark 5, N. J.

If you write maker identify as IEN - 0400

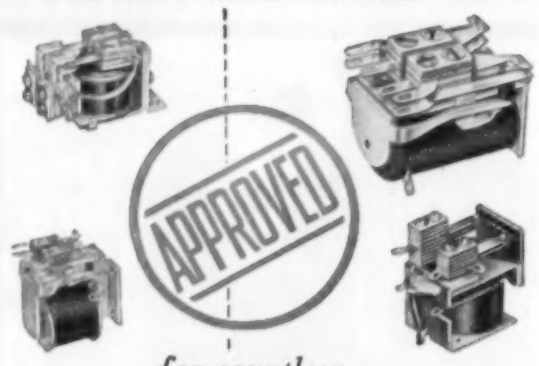
THERMOMETERS . . Dial-type instruments are made of stainless steel with an enclosed helical bimetal element. Dial size is 2 to 6 inches. Range is minus 50 to plus 100 deg. F., detailed in 8-page Bulletin DT. Rochester Mfg. Co., 100 Rockwood St., Dept. IEN, Rochester 10, N. Y.

If you write maker identify as IEN - 0401

THREADING GUIDES . . Stand and spindle for hand taps has capacity to 1 inch. A sensitive model for No. 0 to 5/16-in. taps has a balanced floating spindle. Bulletin FM, 6 pages. Lassy Tool Co., Dept. IEN, Plainville, Conn.

If you write maker identify as IEN - 4472

COMAR RELAYS



for countless industrial and military applications

Aircraft Controls
Business Machines
Radar Systems
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Transcribers
Coin Machines
Guided Missiles
Test Panels
Computers
Electric Timers
Tape Recorders
Generator Controls

Leading manufacturers have consistently "approved" Comar Relays for use in their products. Superior in efficiency, more dependable in operation, Comar custom-engineered relays will help your product perform better.

We specialize in solving relay problems. Send your specs for our recommendations. No obligation.

Comar ELECTRIC COMPANY
3349 Addison Street, Chicago 18, Illinois

RELAYS • SOLENOIDS • COILS • TRANSFORMERS • SWITCHES • HERMETIC SEALING

If you write maker identify as IEN - 4473

CAPACITY + PRECISION + ECONOMY +

Choose INDEX MILLS FOR THESE (+) PLUS ADVANTAGES

Model 55 Vertical Mill

You get more when you buy an Index Mill—more quality, superior features. You are not just buying a machine . . . You are investing in equipment that will deliver better results at lower cost. The ideal machines for all your

MILLING, BORING and DRILLING JOBS

Outstanding in this great line is this versatile MODEL 55 VERTICAL MILL, designed for those extra capacity jobs often found in tool and die shops; provides increased speed and feed range. Capacity ⅛" to 1½" end mills in steel, a table working surface of 32" x 9" or 38" x 9"; overall 40" x 9" or 46" x 9"

INDEX BUILDS BETTER MILLS . . . WRITE FOR LITERATURE

INDEX MACHINE CO.
545 N. MECHANIC STREET JACKSON, MICHIGAN

VISIT OUR BOOTH, NO. 1308, A. S. T. E. SHOW, PHILADELPHIA, APRIL 26-30

If you write maker identify as **IEN - 0402**

THREADING MACHINES . . Power machines for pipe and bolts include five models, 195 types and sizes of dies, and a line of accessories. "Power Machine Catalog," 16 pages. Beaver Pipe Tools, Inc., 300 Dana, Dept. IEN, Warren, Ohio

If you write maker identify as **IEN - 0403**

THREADING TOOLS . . Hand and machine taps in a variety of standard and special sizes are presented with list prices in 20-page Catalog 10. Manufacturing steps are illustrated. Reiff & Nestor Co., Dept. IEN, Lykens, Pa.

If you write maker identify as **IEN - 0404**

TRACTORS . . Gasoline-engine rubber-tire unit of 18 hp., also crawler-type diesel tractors of 40 to 175 hp., bulldozer and shovel attachments, scrapers, graders. Catalog MS-450, 36 pages. Allis-Chalmers Mfg. Co., Tractor Division, 909 S. 70th St., Dept. IEN, Milwaukee 1, Wis.

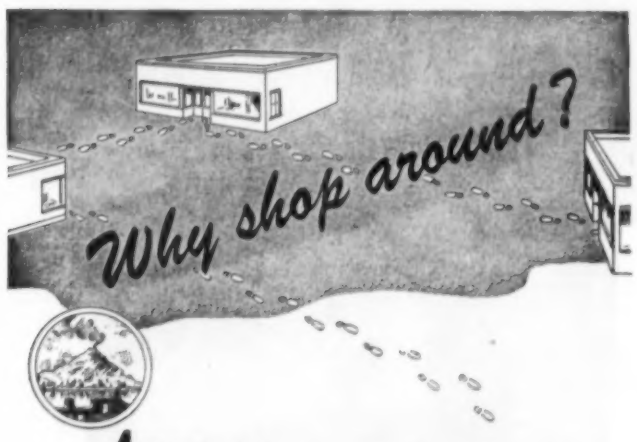
If you write maker identify as **IEN - 0405**

HAND TRUCKS . . Chart of recommended average load ratings on two-wheel and platform trucks is a feature of new 36-page Catalog T-54. One combines a truck and ladder. Fairbanks Co., 393 Lafayette St., Dept. IEN, New York 3, N. Y.

If you write maker identify as **IEN - 0406**

TUBES . . Seamless and welded, stainless, alloy and carbon steel, for heat exchanger and condenser service. Bulletin TB-329A, 6 pages, gives analyses on 29 steels. Babcock & Wilcox Co., Dept. IEN, Beaver Falls, Pa.

If you write maker identify as **IEN - 4474**



AETNA has every kind of plywood you're likely to need

It's a safe bet, whatever your plywood requirements may be, you can satisfy them with AETNAPLY Plywood. It is available in any grade, thickness, size you want.

That's not only handy but advantageous, **one** reliable source, **one** undivided responsibility, **one** well-known standard of quality and uniformity.

Complete technical and fabricating data—engineering help, too—are yours for the asking. Just keep AETNAPLY in mind when you're in the plywood market. And remember, wherever you use it, AETNAPLY plywood looks better, lasts longer, works out better in the long run.

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ARmitage 6-7100

BRANCH WAREHOUSES: Detroit 9, Grand Rapids 7, Indianapolis 2, Peoria and Rockford

NEW LITERATURE—*Concluded*

If you write maker identify as **IEN - 0407**

TUBES . . Duplex tubes employ two metals for inside and outside to resist action of two entirely different types of corrosive media. Copper and steel, aluminum and brass are examples. Bulletin 1954, 16 pages, letterhead request, tells how to select and install duplex tubing. Bridgeport Brass Co., 30 Grand St., Dept. IEN, Bridgeport 2, Conn.

If you write maker identify as **IEN - 0408**

JACKETED VALVE . . Tar, sulphur, wax flow like water through the company's steam-jacketed valve. Bulletin E-200, 4 pages, shows piping arrangement, method of sealing, dimensions on 1½ to 6-in. sizes. Everlasting Valve Co., 81-A Fisk St., Dept. IEN, Jersey City 5, N. J.

If you write maker identify as **IEN - 0409**

WEIGHING . . Portable scale has a dial that can be located in any of eight directions compared to the platform. Graduations are from 125 to 2,000 lb. in six models. These and other features are covered in 4-page Bulletin 2004. Toledo Scale Co., 10 Telegraph Road, Dept. IEN, Toledo 1, Ohio

If you write maker identify as **IEN - 0410**

WELDING ELECTRODES . . Pocket Guide of 44 pages carries selection data on types for mild steel, stainless, nonferrous, cast iron, hard-facing applications together with a comparison chart for electrodes of 16 other makers. Air Reduction Sales Co., 60 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 0411**

WELDING . . Machines and fixtures to assist in tank fabrication include automatic seam welders, form-seam rolling machines, turning rolls. All are described in new 16-page Bulletin 84 with specifications. Reed Engineering Co., 1005-15 W. Fairview Ave., Dept. IEN, Carthage, Mo.

If you write maker identify as **IEN - 0412**

ELECTRICAL WIRE . . Steel core with copper-plated exterior, 5 and 10 per cent by weight, is intended for electrical applications where strength and stiffness are important. Sizes are 36 to 5 B&S gage, hard, annealed, bare, tinned. "Copperply," 4 pages. National-Standard Co., Dept. IEN, Niles, Mich.

If you write maker identify as **IEN - 0413**

MAGNET WIRE . . Ceramic insulation of Ceroc-T magnet wire has a two-layer outer coating of Teflon. Continuous temperature rating is to 250 deg. C. Dimensional data and a space factor chart in 4-page Bulletin 402-J. Sprague Electric Co., 165 Marshall St., Dept. IEN, North Adams, Mass.

If you write maker identify as **IEN - 0414**

WOOD WORKING . . Hollow chisels and bits, router bits, machine drills and bits, plug cutters, countersinks, Teco grooving tools. Catalog 34-M, 24 pages, also gives sharpening instructions and a boring chart for wood screws. Greenlee Tool Co., Dept. IEN, Rockford, Ill.

If you write maker identify as **IEN - 0415**

X-RAY EQUIPMENT . . Standard components are assembled into custom-engineered X-ray units to inspect materials and fabricated parts. A chart in 8-page Catalog C-1 shows range of models by depth and material. Mitchell Radiation Products, E. Washington St., Dept. IEN, Norristown, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4476**

A PAID NEWS ADVERTISEMENT BY WEST DISINFECTING CO.

FREE INSECT CONTROL MANUAL

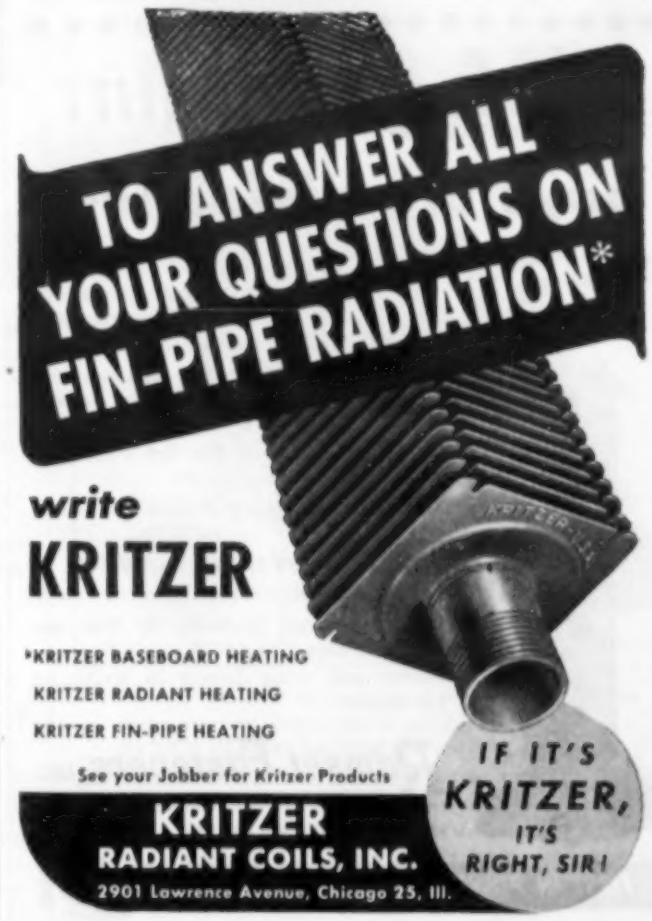
Explains Modern Insecticides

This valuable 36-page booklet covers every phase of controlling industrial and institutional insect infestation, from identification of insects to choice of the best insecticide and best type dispensing equipment for each insect problem. Sixty of the worst insect offenders are pictured, with data on habitat, kind of damage, identifying characteristics, life stages and cycles, reproduction rate, special characteristics, and best methods of control.

The booklet is packed with facts and information gathered during years of laboratory and field work by the specialists of the West Disinfecting Company. It tells how any building can be made virtually insect-free at extremely low cost by today's more efficient methods and products.

Read casually, this book is an education. Read more closely, it can be a powerful tool for increasing efficiency and savings in any plant with an insect problem. Published by the West Disinfecting Company, Dept. 13, 42-16 West Street, Long Island City 1, N. Y.

If you write maker identify as **IEN - 4477**

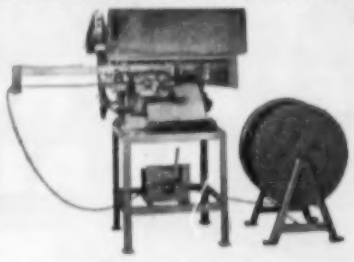


If you write maker identify as **IEN - 4478**

Measure, Cut and Strip Insulated Wire

IN ONE SPEEDY OPERATION

ON ARTOS *Automatic* MACHINES



Does your production require cutting and stripping of insulated electric wire, cord, cable, etc.?

You can produce finished leads *much faster* . . . as many as 3000 per hour in 15-in. lengths . . . on this Artos Automatic Machine. Substantial time savings are obtained over the best manual or semi-automatic methods.

Operation is fully automatic—wire is taken from the reel, measured, cut to length and stripped at one or both ends. Unskilled help can handle the machine. Set-up is easy for different wire types and lengths.

MODEL CS-6E CAPACITY

FINISHED PIECES PER HOUR—From 3000 per hour up to 15 in. lengths to 500 per hour in 64-97 in. lengths.
MAXIMUM STRIPPING LENGTH—1⅓ in. at each end (greater stripped lengths are special).
MAXIMUM CUTTING LENGTH—97 in.
MINIMUM CUTTING LENGTH—2 in. (also as short as ⅞ in. under certain conditions).
TYPES OF WIRE HANDLED—Solid or stranded single conductor wires, parallel cord, heater cord, service cord, etc.
MAXIMUM WIRE SIZE—No. 10 stranded or No. 12 solid.

Other Artos Machines

The complete line of Artos automatic wire cutting and stripping machines will handle *cut lengths* from 1 in. to 60 ft., *stripped lengths* to 6½ in. at one end and 8½ in. at the other, *wire* from No. 12 to No. 000 gauge, and up to 3600 pieces per hour. Ask for recommendations on your problems.

WRITE FOR BULLETIN

Get the complete story—write for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.

2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as **IEN - 4479**

KELLER AIR MOTORS

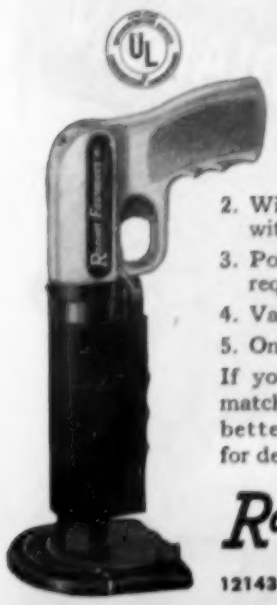
- Compact design with high power-to-weight ratio. Enclosed construction.
- Efficient with either high or low air pressure.
- Positive-acting, piston-type, constant torque motors with infinitely variable speed in either direction.
- ½ To 2¾ hp in a wide range of speeds and torques.

Send for illustrated descriptive Bulletin No. 70

Keller Tool Company
1329 Fulton St.
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 4480

Ramset VERSATILITY pays big dividends!



To give you the greatest speed, ease and economy when fastening to steel or concrete, only RAMSET SYSTEM offers:

1. Choice of 3 JOBMASTERS for light, medium or heavy-duty work
2. Widest range of Tru-Set Fasteners with 65 sizes in 6 types
3. Power charges matched to power required
4. Varied line of special accessories
5. On-your-job service by nearby dealer

If you are not profiting by this unmatched versatility of RAMSET SYSTEM, better ask your dealer or write us for details.

Ramset Fasteners, INC.
Ramset Division, Olin Industries, Inc.
12143 BEREA ROAD • CLEVELAND 11, OHIO

FIRST IN POWDER ACTUATED FASTENING — AN Olin PRODUCT

If you write maker identify as IEN - 4481

Announcing Portable ELECTRONIC SCALE

Control Cells

Handles up to 20 tons — weighs only 35 lbs.!
Carry it anywhere
Weigh large loads easier and faster

Set it up in seconds—for any job! When weighing's done pick up the scale and carry it to other work. No special installation needed, no tools. And no costly maintenance. The Control Cells Electronic Scale is unaffected by weather, temperature, or rough usage. Has no vacuum tubes or fragile parts and withstands *overloads* up to 10 tons.

Dial may be placed at the work or remotely connected. Several platforms may be hooked up to read through one indicator. Readings are instantaneous and accurate.

The Control Cells Electronic Scale or Weight Indicator offers almost endless possibilities for new weighing techniques—new savings in handling and processing operations. Reasonably priced.

Send for complete literature. Engineered applications also available for built-in installations.

CONTROL CELLS CORPORATION
511 North Hillside • Wichita 6, Kansas

CONTROL CELLS CORPORATION
Research Department
511 North Hillside, Wichita 6, Kansas

Please send me complete information about your new Electronic Scale.

Name .....

Position .....

Firm .....

Address .....

If you write maker identify as IEN - 4483

RELAY . . Time delay unit with contacts operated by heater coil

Source: SHELDON ELECTRIC CO.
69 Coit St., Dept. IEN, Irvington 11, N. J.

Factory set

The mechanism in this new relay is hermetically sealed in a standard receiving type radio tube measuring 3¼ in. in seated height. Two bi-metal contact arms carry single-pole single-throw silver contacts. They can be specified either normally open or normally closed. On one of the arms is a heater coil. This coil can be supplied for operation on 6.4, 26.5 or 117 volt ac./dc. for a specified delay interval in an overall range between 5 sec. and 5 minutes. There is a minor variation in timing from room temperature in an overall ambient range between minus 60 and plus 80 deg. C.

The contacts rate 150-volt dc., 250-volt ac. for delay periods to 75 seconds. The current rating is 3 amp. at 450-volt ac. or dc. with delay at 105 sec. or more.

If you write maker identify as IEN - 4484

STRAPPING . . Stretching tool, air operated for predetermined tension

Source: ACME STEEL CO.
2840 S. Archer Ave., Dept. IEN, Chicago 8, Ill.

Bulletin, "Stretchers"

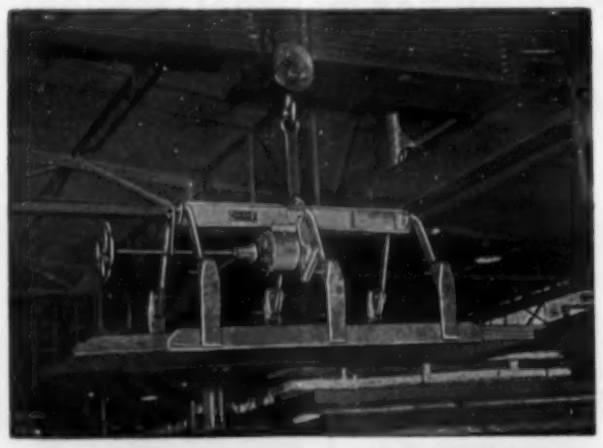
Steel strapping can be secured on appliances, circular containers, packages, bundles, skids, pallet loads, by this new air operated stretching tool. Air pressure from a shop source enters through a regulator, that forms part of the tool assembly, to drive rotary gripping dogs. They will take up any amount of slack strapping and apply predetermined tension ready for sealing. The tool will handle strap widths from ⅜ to ¾ in. and thickness from 0.01 to 0.023 inch. Weight ranges from 3½ to 9½ pounds.

If you write maker identify as IEN - 4485

Electronic induction heating and heat treating equipment is now available on a rental basis from Induction Heating Corp., 181 Wythe Ave., Dept. IEN, Brooklyn 11, N. Y. The plan is based on a minimum period of 5 years with the first 3 months' rental rate payable in advance and subsequent rental obligations to be paid monthly. Installation is made by staff supervised personnel and test runs are performed before the equipment is turned over to the user. Installation charge is $200. A member of the Induction Heating staff periodically visits the installation to inspect it, offer suggestions and make improvements wherever this is possible. The company has prepared a 4-page description and will send it to you upon request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4486



Save Time . . . Save Sheets

Handle loose or bundled sheets with one of these C-F Lifters and you save TIME and Sheets, because C-F Lifters, under one man end control, can handle more sheets per load safer, faster and more economically. Tong action grips load tightly, yet design features like wide bearing surface give full protection to stock edges. End control of C-F Lifters permits closer stacking piles—resulting in more efficient use of storage facilities. C-F Lifters are available in capacities from 2 to 60 tons or larger, in standard or semi-special designs.

WRITE FOR THE BULLETIN "C-F LIFTERS"

CULLEN-FRIESTEDT CO., CHICAGO 23, ILL.

CULLEN-FRIESTEDT CO., 1310 So. Kilbourn Ave., Chicago 23, Illinois

If you write maker identify as IEN - 4487

COMPRESSED AIR AND GAS COME OUT OF THE LOGAN ARIDIFIER

Scrubbed CLEAN AND DRY

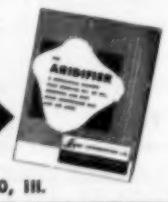
INSTALL ARIDIFIERS ON LINES SERVING

- Paint Spray Guns
- Air Tools
- Air Hoists
- Foundry Jolting Machines
- Sand Blasting Tools
- Sand Blasting Rooms
- Metal Spray Guns . . . or Wherever the line must deliver clean, dry air or gas

On any air or gas line 92% of the dirt, oil, scale and water that enter the Aridifier is trapped and removed from circulation. The Aridifier's patented centrifugal-baffle action scrubs air and gas clean and dry . . . protects equipment, prevents freezing, fouling, corrosion and caking, produces best results with spray gun and air tool operations, etc. Easy to install. Self cleaning. Maintains itself. 10 models available. Capacity 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.

Write for This Catalog Now!



Logan ENGINEERING CO.
4902 W. Lawrence Ave., Chicago 30, Ill.

If you write maker identify as IEN - 4488

JIG GRINDING ACCURACY *guaranteed**

INFINITE CONTROLLED SPEEDS 30,000 TO 65,000 R. P. M.

Easily connect jig grinder to jig borer or mill

Then you can finish grind in hardened steel to "tenths" . . . jig grind dowel holes square with a ground base . . . move location of holes in hardened steel blocks . . . jig grind interchangeable holes in hardened sections . . . grind small holes with diamond impregnated mandrels . . . grind contours and relief with tungsten carbide burrs . . . grind radii in die sections . . . eliminate jig bushings in tools where close spacing is essential.

Other infinitely controlled air driven spindle applications

Place spindle on most any machine. Use it for finishing contours on hardened steel working surfaces . . . burring or milling die castings . . . routing wood contours . . . carbide milling or finishing slots . . . finishing holes in hardened steel to "tenths" . . . grinding with diamond wheels, carbide burrs, or diamond impregnated mandrels.

Advantages—10 micro finishes using carbide mills . . . 6 micro finishes using mounted points, operates at any angle . . . air driven, air cooled, overheating prevented . . . speed controlled at optimum point . . . 3¾" long motor uses little working space . . . By controlling speed at any point you abolish need for many constant speed spindles.

For immediate quotation please state machine tool application. Get this manual of photos showing operations Vulcanaire performs.

*Dependably accurate to "tenths"

Vulcanaire
It's built by toolmakers for toolmakers

VULCAN TOOL CO., 734 LORAIN, DAYTON 10, OHIO

If you write maker identify as IEN - 4490

Designed for use with Impact Wrenches

THE NEW TITAN "Bull Dog" STUD DRIVER

Built for rugged use required in locomotive shops, plants building heavy equipment such as engines, air compressors, etc.

Equipped with special Titan Design Loose Pressure Plunger. Definitely stands up under vibration encountered when using an impact wrench for motive power. Loose Pressure Plunger affords much easier release from stud after it is driven and tends to prevent pulling the stud back out of the casting.

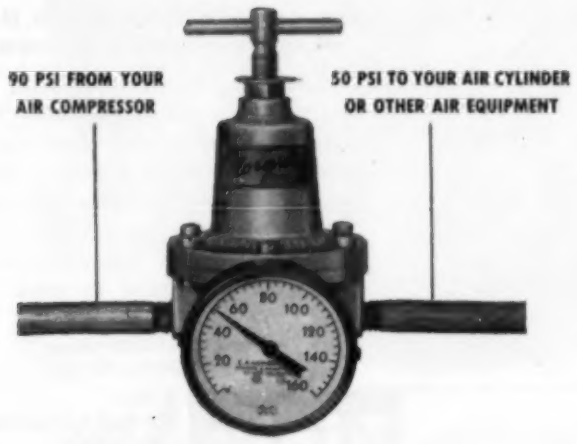
Accommodates stud diameters from 1/4" to 3". Female driving squares from 1/2" to 1 1/2". Morse Taper and Hex Chucks can be furnished to adapt the tool to motive power other than impact wrenches.

WRITE for complete information, TODAY!

TITAN TOOL CO.
Production Tools
52 MAIN ST., FAIRVIEW (ERIE COUNTY), PA.

If you write maker identify as IEN - 4491

Why waste compressed air at 90 psi where 50 psi will do a better job ?...



...and
- reduce wear on air equipment
- save dollars on air costs

use *Norgren* PRESSURE REGULATORS

Norgren Regulators more than pay for themselves in savings in air costs alone. More important—they accurately control air pressures to assure proper operation of equipment and minimum maintenance costs. Available in wide range of remote control, low pressure, relieving and cylinder gas types.

WRITE FOR NEW CATALOG No. 600

PIONEER AND LEADER IN OIL-FOG LUBRICATION FOR 26 YEARS

Norgren C. A. CO.
3432 So. Elati, Englewood, Colo.

• VALVES • FILTERS • REGULATORS • LUBRICATORS • HOSE ASSEMBLIES

If you write maker identify as IEN - 4493

GAGE . . Flexible steel tape, 25 to 100-ft. lengths in steel case

Source: JUSTUS ROE & SONS
Roe Court, Dept. IEN, Patchogue, N. Y.

Met-All White

A hard flexible white finish is applied on the front and rear faces of this new White Clad steel tape. Figures and markings appear in black on the white background. The white can be ground off without removing the markings. The tape is wound in a steel case that is copper plated, welded and finished in red vinyl. Each tape is packed in a vinyl pouch with an air-tight toothless zipper. A hook handle is available.

If you write maker identify as IEN - 4494

SCREEN . . Woven Fiberglas, vinyl plastic coated, is weather proof

Source: JOHN H. GRAHAM & CO.
105 Duane St., Dept. IEN, New York 8, N. Y.

Technical data upon request

Fiberglas yarn, coated with vinyl plastic, is woven in standard flyscreen mesh and is colored green in manufacture of this new Life Time screen. The material is light and has excellent structural strength. It is not subject to weathering, rotting or mildewing. It is not affected by contact with sunlight, fresh or salt water spray, immersion or exposure. It presents a surface that can be washed readily.

The mesh is heat set during the weaving operation so the individual strands are locked permanently in place to prevent raveling and strand displacement. Cuts and tears can be repaired by fusing a patch over the damaged area with an ordinary iron. The screen can be handled and installed like cloth. It can be cut with ordinary scissors. It will not stretch, shrink or bag out in service.

If you write maker identify as IEN - 4495

DEMAGNETIZING . . Electric coil for use on hardened tools and work

Source: L-W CHUCK COMPANY
41 S. St. Clair St., Dept. IEN, Toledo 4, Ohio

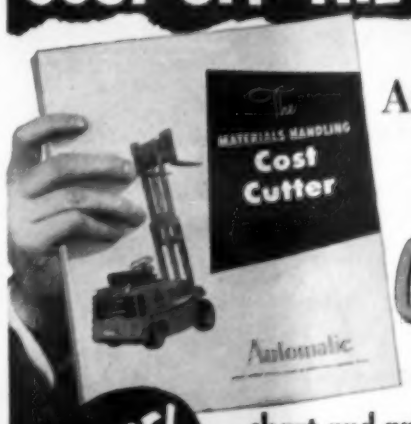
Push button control

Drills, reamers, small ferrous production parts, are inserted one at a time into the opening of this new coil type demagnetizer to clear up any magnetic charge that may be retained in them. The coil opening measures 3¾ in. in diameter. No physical contact between the coil and the work is required. Operation is on 110-volt 60-cycle ac. Instructions are provided on a plate fixed to the top of the housing. An extension cord and plug are included.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4496

JUST OFF THE PRESS!



FREE!

Automatic's **COST CUTTER** shows you how to **chart and analyze your own materials handling operations**

Here is a completely new, completely *different,* 24-page booklet...one of the most valuable aids ever offered in the Materials Handling field! Written for Automatic by a nationally-famous authority, it shows you how professional materials handling specialists analyze and chart operations...teaches you, in a simple, quick, easy-to-read way, how to uncover the "weak links" in your own materials handling and *chart for yourself* improvements that will give you greater efficiency and lower costs. Moreover, it is aimed at *your own field,* with case histories of what others are doing to lick the very materials handling problems that worry you most.

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Automatic
109 W. 87th St., Dept. D-4, Chicago 20, Ill.
WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS

If you write maker identify as IEN - 4497

ENGRAVE

NAME PLATES • PANELS • DIALS
in your own shop

10,000 IN USE Accepted by all leading manufacturers as the speediest, most versatile portable engraver. Only the NEW HERMES has these patented features:
- Adjustable for 15 ratios.
- Self-centering holding vise.
- Automatic depth regulator.
- Adjustable copy holders.

Send direct to us for booklet IM 23

NEW HERMES ENGRAVING MACHINE CORP.
13-19 University Place • New York 3, N. Y.

If you write maker identify as IEN - 4498

An ever increasing number of manufacturers of all types of products have found that by specifying lapped finish on mating surfaces they have been able to eliminate gaskets or improve product performance. Precision flatness and finish on a production basis is easily obtained with the Crane Lapmaster. Tolerances to one light band (.0000116") or less—micro-inch finishes of 2 to 3 RMS can be maintained consistently. Learn more about the possibilities of production lapping and the interesting subject of measuring flatness. The illustrated fact filled booklets are yours for the asking. Write today.

CRANE PACKING CO., DEPT. IEN-4
1815 CUYLER AVE., CHICAGO 13

JOHN CRANE — CRANE PACKING COMPANY

If you write maker identify as IEN - 4499

WHITNEY METAL TOOL COMPANY

41 YEARS EXPERIENCE

WHITNEY-JENSEN
Nos. 26 - 27
PUNCHES

The ball-bearing screw press principle is here applied to a large, hand-operated punch mounted on a sturdy floor stand. Full throat depth for work in sheets; with tie-plates, throat depth is decreased and capacity increased. Capacity, full throat depth, mild-steel (No. 26) 2" thru 3/32", (No. 27) 2" thru 1/16". Capacity, with tie-plates, 1/2" thru 3/8", both models. Send for our new catalog.

WHITNEY METAL TOOL COMPANY
200 FORBES STREET, ROCKFORD, ILLINOIS

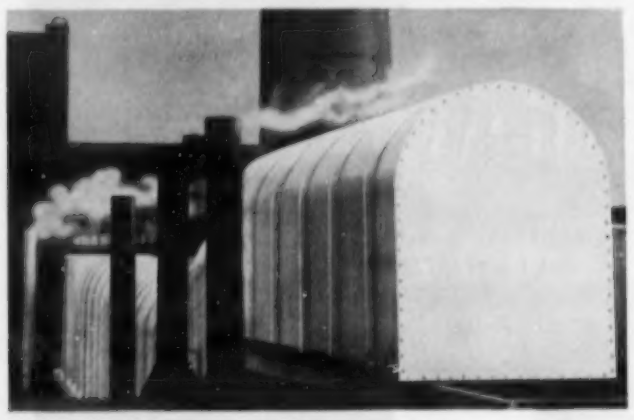
If you write maker identify as **IEN - 4500**

H_2O anyone?

● If you need or use between 200 and 100,000 gallons per minute of clean water, find out how Cuno's FLO-KLEAN filters can save you money. In hundreds of applications throughout industry, the fully automatic, continuously self-cleaning FLO-KLEANS have paid for themselves many times over by making raw river, lake, or well water fit for industrial use—and reclaiming process water. Write for the free FLO-KLEAN bulletin. The Cuno Engineering Corporation, Dept. 692F, Meriden, Connecticut.

3.2

If you write maker identify as **IEN - 4501**



Boiler breeching, Southland Paper Mills, Inc., Lufkin, Texas.
Aluminum Paint: High Heat Aluminum, Napko Paint & Varnish, Houston, Texas.

One coat of ALUMINUM PAINT protects exposed boiler breeching for more than 20 months!

Painted with *one coat* of aluminum paint, this boiler breeching had been subjected to atmospheric exposure for twenty months when the photo was taken. The paint was in excellent condition, good for many more months of protection. An application such as this, where most paints fail within six months, is an outstanding testimonial to the remarkable service life you can expect from the *right* aluminum paint.

Alcoa does not make paint . . . but ALCOA Aluminum Pigments are used in *more* aluminum paints than any other brand. ALCOA's co-operation with paint manufacturers has made possible many special formulas designed to solve your toughest problem. Aluminum paint offers the utmost in brightness and protection.

Ask your paint supplier about specially formulated aluminum paints—or tell us your problems. We'll gladly recommend the correct type of aluminum paint for your job.

Send coupon for FREE BOOKLET, *Painting with Aluminum*

Aluminum Company of America, Paint Service Bureau
1787-D Alcoa Building, Pittsburgh 19, Pa.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

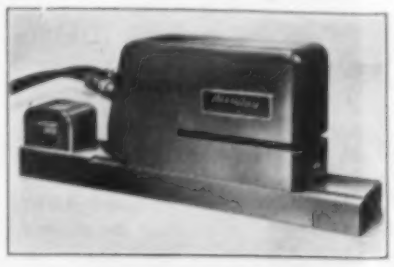
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

If you write maker identify as **IEN - 4503**

GAGE . . Electronic equipment reads thickness in a moving strip

Source: INDUSTRIAL NUCLEONICS CORP.
1205 Chesapeake Ave., Dept. IEN, Columbus 12, Ohio



No physical contact

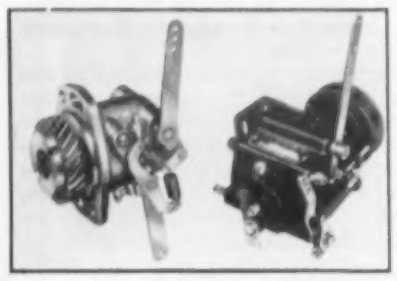
Illustrated is new design of the AccuRay radiation gage for application on metal strip on small cold reduction mills. It provides a measurement range for thickness deviation between 0.00005 and 0.06 inch. It is positioned by a lead screw mechanism that enables it to traverse strip to 6 in. in width. Its overall dimensions are 26 by 4½ by 10½ inches.

The new unit employs radioactive material enclosed in a capsule mounted in one of the two heads that apply above and below the moving strip. Beta rays from this material are directed at the strip. Those that are not absorbed pass to the head on the opposite side. Here they are gathered in a radiation detector and are used to operate an indicator or recorder. When the standard recorder is used, it provides a permanent record of each coil reduction on its strip chart.

If you write maker identify as **IEN - 4504**

CONTROL . . Centrifugal governors, geared and universal, for engines

Source: HOOF PRODUCTS CO.
6543 S. Laramie Ave., Dept. IEN, Chicago 38, Ill.



Engineering Data Manual on request

Two new designs have been added to the Hoof line of centrifugal governors for internal combustion engines. One, to the left in the illustration, is gear drive with a new arrangement of double external control springs to eliminate need for spring change under changing conditions. The second governor, to the right, is a universal design that applies on a range of engines. The extended actuating lever can be shifted from one side to the other or up and down for right or left hand mounting and to line up with the carburetor lever.

Construction includes ball, roller, needle bearings, the latter on the flyball mechanism, sealed assembly to retain oil, exclude dirt and eliminate need for daily lubrication. The universal design has a variable speed lever so the governed speed can be varied to meet requirements.

If you write maker identify as **IEN - 4505**

Transistors are now being laboratory made of silicon by Raytheon Mfg. Co., 138 River St., Dept. IEN, Waltham 54, Mass., for operation at temperatures to 350 deg. F. Each unit is about the size of a kernel of corn and operates on a negligible amount of current. It is not expected that the unit will be generally available for some little time.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4506**

New IBH* Handbook

***"IN-BETWEEN HANDLING"**
Short distance hydraulic manipulation of materials too heavy for manual handling yet not requiring high priced power-driven equipment.

Answers the Questions You've Been Asking!

Every plant executive, materials handling, plant maintenance and methods superintendent will want his personal copy of this new materials handling guide book. It contains complete information on how to apply the very latest materials handling techniques to your business.

Learn how hydraulic handling for EVERY department is now easily accessible to every plant, large or small . . . how specialized tools can be put to work to eliminate present materials handling bottlenecks . . . how you can increase the mechanization of your handling yet at the same time reduce your original equipment, maintenance and operation costs.

Also Available—complete information on any or all of the 40 BIG JOE foot and battery operated hydraulic lift trucks.

"Hydraulic Handling for EVERY Department"

BIG JOE
MANUFACTURING COMPANY
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If you write maker identify as **IEN - 4507**

Get proof of vibration-control with even one package

You get ten economical 18 x 18" ISOMODE* PADS in a standard stockroom package. At the recommended Pad loading of 50 lbs per sq. in., this gives you enough mountings for up to 80 TONS OF MACHINERY. Simply cut to required size, place the pads under legs or base—and you begin to see proof of vibration-control with benefits like these:

Machines stay put without bolts or lag screws . . . Noise diminishes . . . Even punch press shocks are absorbed . . . Machines stay tighter longer . . . Less cracks in floor and building.

Write for prices and detailed Bulletin No. 415.

**Trade Mark*

ISOMODE* PADS are produced by

THE MB MANUFACTURING COMPANY, INC.
1064 State Street, New Haven 11, Conn.

If you write maker identify as **IEN - 4508**

PAINT SPRAY GUNS
13 different models

SPRAY BOOTHS
over 510 styles and sizes

AIR COMPRESSORS
60 models 1 to 105 c.f.m.

OIL AND WATER EXTRACTORS
7 models to supply clean, dry air

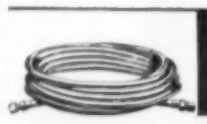
Everything FOR SPRAY PAINTING and COATING

Binks

the complete, 1-source line of integrated equipment

If the material can be applied by spraying, you will find in Binks complete line exactly the right equipment to do the job better, a little faster and usually more economically. You have more than 1,100 *standard* products from which to choose...all designed to work together.

Ask your Industrial Distributor or write for Catalog No. 955



HOSE AND ACCESSORIES
12 types of hose
all accessories

Binks

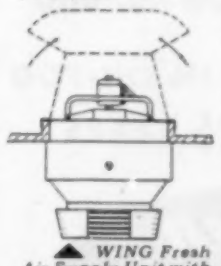
BINKS MANUFACTURING COMPANY
3120-34 W. Carroll Ave., Chicago 12, Ill.

REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES
SEE YOUR CLASSIFIED DIRECTORY

If you write maker identify as **IEN - 4509**

Is Your Factory Starved for AIR?

If this is what happens when you go from the office into the shop, your plant is *starved for air!* Vacuum from exhaust equipment is usually responsible. While our pictures may be slightly overdrawn, something like that may be happening in your plant.



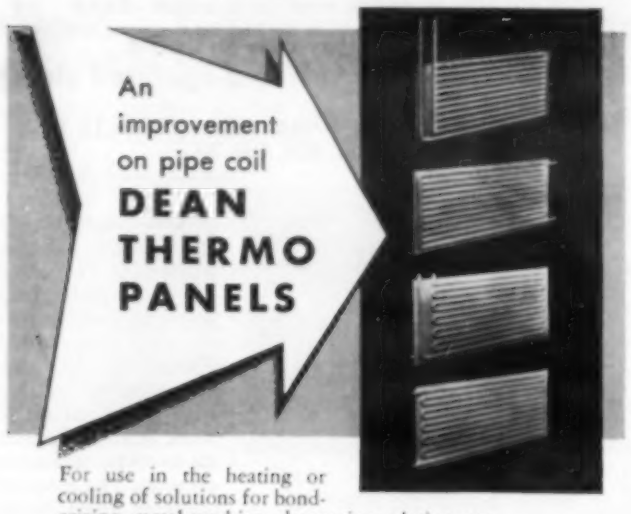
▲ *WING Fresh Air Supply Unit with fan above roof line.*

If your building is not new, the vacuum may be relieved by crevices, windows, and loose-fitting doors admitting much unheated air, rendering your heating system entirely inadequate. If the building is air-tight, the ventilating system won't work properly, unless make-up air equally replaces exhaust air.

Here's an easy solution. Install WING FRESH AIR SUPPLY HEATERS with Revolving Discharge Outlets. In winter they bring in fresh air with controlled temperatures, replacing exhausted air. In summer, with the steam shut off, fresh air is circulated, keeping workers cooled and production up to par in stifling weather.

L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N. J.

If you write maker identify as **IEN - 4510**



For use in the heating or cooling of solutions for bonderizing, metal washing, degreasing, plating, etc. Low in first cost . . . light weight . . . space-saving . . . do away with expensive pipe coiling . . . provide efficient heat transfer.

Available in special shapes such as "U"s, "L"s, and cylinders . . . and in a wide range of materials, including iron, stainless steel, Monel and other special alloys.

Send for FREE bulletin giving facts and prices. **Dept. IE**

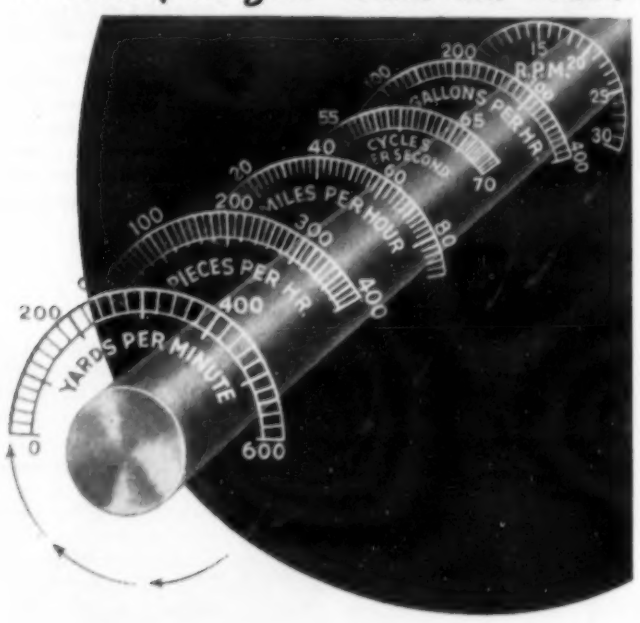
Manufacturers Representatives Wanted.

Write for details. Choice territories now open.

THERMO-PANEL
DIVISION
DEAN PRODUCTS, INC. • 616 Franklin Ave., Brooklyn 38, N. Y.
STerling 9-5400

If you write maker identify as **IEN - 4511**

If some part goes 'round and 'round



...WESTON
Electrical Tachometers

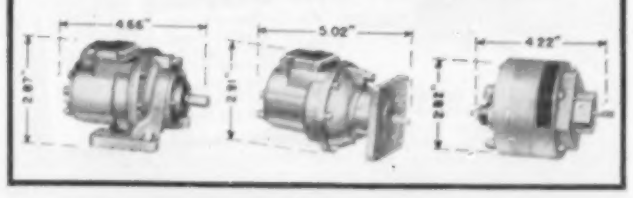
can provide a simple, accurate key to control!

Wherever instant, accurate measurement furnishes the key to precise control, equipment manufacturers now build-in WESTON Electrical Tachometers. For no other method approaches the electrical tachometer for simplicity, ease of installation, overall dependability and ready adaptability to problems of design.

The specially designed WESTON A-C and D-C Tachometer Generators, for example, save up to 50% in size and weight, and are available in forms to permit wide flexibility in mounting, and in connection arrangements. The WESTON Indicators, too, are available in required sizes and shapes, calibrated in any function of the RPM. Available to directly indicate speeds as low as 1/10 RPM up to 80,000 RPM.

Other advantages of electrical tachometers such as . . . multiple indications from one generator . . . remote indications . . . dependable, long-term accuracy . . . and low mantenance, warrant full investigation. Complete details gladly sent on request. WESTON Electrical Instrument Corporation, 614 Frelinghuysen Ave., Newark 5, N. J.

Space-saving • Weight-saving WESTON Generators

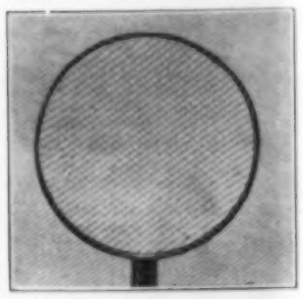


WESTON *Instruments*

If you write maker identify as **IEN - 4513**

FILTERING . . Synthetic fabric suited for free filtering applications

Source: FILTRATION ENGINEERS INC.
155 Oraton St., Dept. IEN, Newark 4, N. J.



Sizes to order

The company announces a new Feon filter fabric made of polyethylene monofilaments in a relatively open mesh. The fabric supplements the Feon previously described IEN-11426-51. It is suited particularly for free filtering applications such as coarse crystalline materials or fibrous pulps. In these applications it will not blind or plug up in continuous operations. Its smooth filament permits easy cleaning.

The fabric is resistant to attack by alkalis and organic acids. It is resistant to a range of organic materials.

If you write maker identify as **IEN - 4514**

TESTING . . Magnetic power supply rates 50 amp. at 10 to 32 volts dc.

Source: PERKIN ENGINEERING CORP.
345 Kansas St., Dept. IEN, El Segundo, Calif.

Second in a series

Magnetic amplifier takes the place of electronic tubes or a selenium rectifier in this new Type-MF 1032-50 test equipment. It extends the capacity range of the 15-amp. unit previously described IEN-3375-53. Operation is on 220-volt ac. The assembly includes an ammeter and a voltmeter. Overall dimensions are 22 by 18 by 42 inches. Ripple is 1 per cent rms. maximum. Recovery is 0.1 second.

If you write maker identify as **IEN - 4515**

LAYOUT . . Felt tip pen to apply layout ink on work surface

Source: CROWN INDUSTRIAL PRODUCTS CO.
802 Amsterdam St., Dept. IEN, Woodstock, Ill.

Also for marking

New pen measuring 8 in. in length and a new layout ink, which the company also can supply, work together to prepare the surface of work pieces to scribe layout lines. The pen is made of aluminum and brass and holds about an ounce of ink. Its felt tip draws the ink through a valve mechanism that controls its flow.

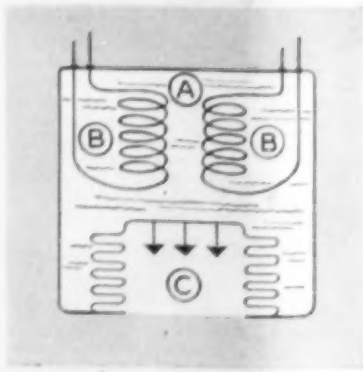
Replaceable tips are available in pointed and chisel shapes. The ink is available in 8-oz., pint, quart and gallon containers.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4516**

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

NEW IMPROVEMENT IN HERMETICALLY SEALED UNIT... Efficiency gained when bellows are used as an expansion chamber



In hermetically sealed units where oil expands and contracts in service, bellows add greatly to the efficiency and life of the unit. In this aircraft transformer unit, for instance, expansion of the oil at (A) due to temperature rise as current flows through coils (B) shortens the bellows (C). Upon contraction of oil by lowered temperature, the bellows expands, filling the void. Clifford metallic bellows used is flexible and leakproof, assures absolute maintenance of the hermetic seal. Units thus protected can be mounted in any position, stand up under vibration and temperature extremes.

Clifford is glad to answer your questions or provide "bellows-engineering" help.

Write for bulletin: "*What To Consider When Selecting A Metallic Bellows.*" Clifford Manufacturing Company, 146 Grove Street, Waltham 54, Massachusetts. *Division of Standard-Thomson Corporation.* Sales Offices in New York; Detroit; Chicago; Los Angeles; Waltham, Mass.

If you write maker identify as **IEN - 4517**

NYLINED* BEARINGS

... with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- **Resiliency resists poundout**
- **Permit dry operation**
- **Minimize abrasion failures**
- **Silent operation**
- **Lower friction**
- **Superior corrosion resistance**
- **Damp mechanical vibration**
- **Eliminate friction oxidation**
- **Operate in liquids**
- **Close fits**
- **Non-contaminating**
- **Extremely compact**
- **Light weight**
- **Low cost**
- **Longer life**
- **Less maintenance**
- **Bearing surface instantly replaceable**

*For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.

Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as **IEN - 4518**

5 REASONS FOR CALLING CORDS LTD.
For Cords and Cord Sets

- ★ Fast delivery on cords of standard construction.
- ★ Complete engineering and manufacturing service on cords for special applications.
- ★ Integrated engineering-production control from rod mill to mold department.
- ★ Most comprehensive stock of dies and molds for electronic cords and assemblies in existence.
- ★ Quality proved by use on millions of products.

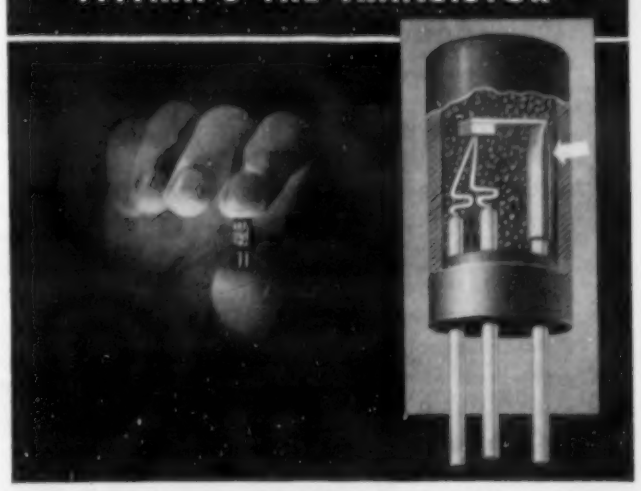
Write for New 1954 Catalog

WIRE SX PRODUCTS

CORDS LTD.
DIVISION OF ESSEX WIRE CORPORATION
121 DODGE STREET, DE KALB, ILLINOIS

If you write maker identify as **IEN - 4519**

SMALL TUBING—BIG NEWS ...THAT'S THE TRANSISTOR



Top news in radio and television is the Transistor—possible successor to many vacuum tubes.

The Transistor shown above is made by CBS-Hytron, division of Columbia Broadcasting System, Inc. The L-shaped crystal support is formed from Superior seamless nickel tubing. It's .032" I.D., .003" wall, .193" long with a 90° bend. CBS-Hytron relies upon Superior close tolerances and formability for this fussy small-tube application. Why don't you? Superior Tube Company, 2016 Germantown Ave., Norristown, Pa.

All analyses .010" to ⅛" O.D.
Certain analyses in Light Walls up to 2½"

Superior THE BIG NAME IN SMALL TUBING

If you write maker identify as IEN - 4520

DAY DUST CONTROL
SINCE 1881
A SINGLE UNIT OR A COMPLETE SYSTEM

DAY "AC" FILTER HAS 99.99+% FILTERING EFFICIENCY

The new efficiency achieved with the DAY "AC" Dust Filter provides benefits not possible with conventional filters. Its 99.99+% filtering efficiency applied to your plant will give you better dust control, larger recovery of valuable product, minimized plant hazards and more economy in space, installation and maintenance costs.

72 YEARS' EXPERIENCE IN INDUSTRIAL DUST CONTROL

Since 1881, The DAY Company has specialized in the engineering, manufacture and installation of dust control systems for industry. If you have a dust problem, DAY can provide an effective and economical solution.

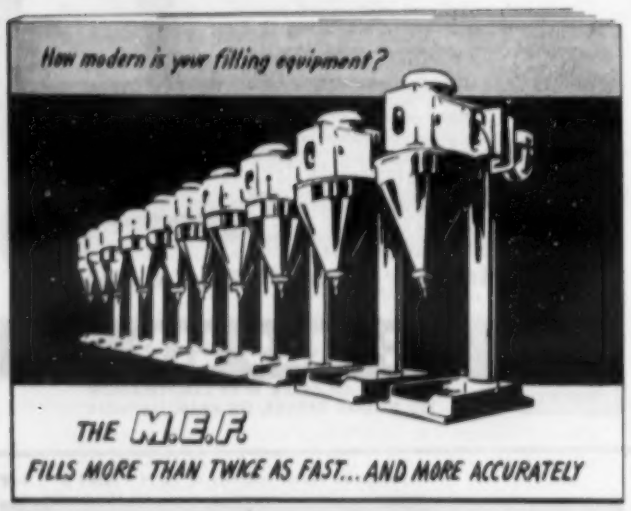
WRITE FOR NEW BULLETIN

It will give you detailed facts and figures on the DAY "AC" Dust Filter and other DAY equipment.

The DAY Company
813 - 3rd Avenue N.E. • Minneapolis 13, Minnesota
IN CANADA: P.O. Box 70T, Ft. William, Ont.
Branch Plants in Buffalo, Ft. Worth and Welland, Ont.

If you write maker identify as IEN - 4521

how modern is YOUR filling equipment?



WHY NOT FIND OUT?

Write today for this new, free brochure

Here's valuable reading for packaging and production executives interested in cutting filling costs and speeding up production. Shows typical applications handling liquids, pastes, abrasives, both free and non-free flowing powders, melted materials up to 500° F., and many others including aseptic and explosive. Pictures manual, semi-automatic, and automatic equipment with filling speeds up to 240 a minute with 99.7% mechanical accuracy! Yours for the asking — mail coupon today. No salesman will call.

—CLIP AND MAIL—

G. DIEHL MATEER CO., Dept. I 54
Lincoln Highway, Devon, Pa.

Please send me the brochure "HOW MODERN IS YOUR FILLING EQUIPMENT?"

NAME_____
COMPANY_____
ADDRESS_____

If you write maker identify as IEN - 4523

TESTING . . Electronic equipment for metal sorting and quality control

Source: J. W. DICE COMPANY
1 Engle St., Dept. IEN, Englewood, N. J.

For a production line

Non-destructive testing and sorting of mixed or incorrectly processed metal parts can be handled quickly and accurately by this new Model-C1 assembly of the Du Mont Cyclograph, previously described IEN-18-49, and a new Type-407 automatic sorter unit. Application can be made on either ferrous or non-ferrous metals.

Raw stock, semi-finished or finished parts can be sorted by their metallurgical characteristics such as analysis, hardness, structure, case depth. In each case the sorting action is against a known and acceptable part. It is employed as a "standard" in setting up the equipment.

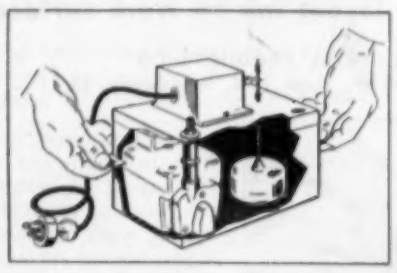
Operation is based on the principle that a metal core introduced into a high frequency field, established in a test coil, will cause energy losses in the field. The coil forms part of the instrument's tuned oscillator circuit and controls the operating frequency of the oscillator. Coil losses, occurring in the field, decrease the output. The resulting pattern on the tube screen provides the indication that is interpreted by the operator, or actuates the sorter so it sends out a reject signal whenever an off-standard part passes through the test coil. This signal can be employed to operate a solenoid reject gate, a paint spray marking device or other reject means.

Size and shape of the part is not a problem. Typical parts that can be inspected include bolts, nuts, screws, valves, roller bearings, jet engine rollers, blades and forgings, malleable castings, welding rod, automotive parts, steel and copper tube, piston rings, ordnance items, bar stock.

If you write maker identify as IEN - 4524

PUMP . . Motor-driven centrifugal with tank and control for sump duty

Source: SAMEL S. GELBER COMPANY
162 N. Clinton St., Dept. IEN, Chicago 6, Ill.



Gelber Bantam

Miniature assembly of pump and hermetically sealed motor, rectangular housing and float controlled switch, has been added to the company's line to remove condensate as it collects from refrigerating and air conditioning equipment. Overall dimensions are 8 by 5 by 5 inches. Capacity is 3 gpm. at 1 ft., 1.2 gpm. at 6 feet.

The motor operates sealed in oil where it cannot be wetted by dripping water or condensation. Its shaft extends through a neoprene seal mounted in stainless steel. The pump housing is die cast aluminum with a plastic coating baked on. External fastenings are made of stainless steel. The float is copper. A ball check in the discharge line prevents water that has been pumped out from returning.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4525

NEW! Greater Capacity! Smaller Size! Longer Life!

A revolutionary development in industrial gearing! Foote Bros. applies its aircraft quality gear manufacturing experience to its industrial gear production...to give you greater capacity and longer life in less space!

FOOTE BROS. Duti-Rated LIFETIME GEARING

Want to learn how these better gears will work in your product? Write today for complete details!

FOOTE BROS. GEAR AND MACHINE CORPORATION
4545 S. Western Boulevard, Dept. AD, Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

If you write maker identify as IEN - 4526

INDEXING . . Motor-driven table controlled by solenoid-operated clutch

Source: SWANSON TOOL & MACHINE PRODUCTS INC.
814 E. 8th St., Dept. IEN, Erie, Pa.

Bulletin TC-10

New design, employing a clutch, has been added to the company's Series-T turret indexing tables, previously described IEN-912-54. The new assembly is available with 8, 16, 24 or 32 work stations on 20, 30 or 40-in. turret diameters. The solenoid operated clutch can be actuated by push button control. Limit switches can be employed to prevent indexing action before a given operation is completed. The table provides locations to mount a variety of work holding and operating elements for automatic and semi-automatic sequencing.

If you write maker identify as IEN - 4527

CAPACITOR . . Hermetically sealed, rates 4,800 hour time constant

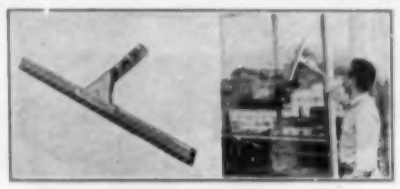
Source: INDUSTRIAL CONDENSER CORP.
3243 N. California Ave., Dept. IEN, Chicago 18, Ill.

Catalog 1117A

Typical applications, for this new Stabelex Type-D capacitor, include electronic computers, calculators, spectrographs where low absorption, high insulation resistance, low power factor are required. The design is available for upright or inverted mounting in operating temperatures that range from minus 80 to plus 75 deg. C. Capacity tolerance is within 10 per cent to plus or minus 1 per cent. Change in capacity is within 0.4 per cent in a range from room temperature to 75 deg. C.

If you write maker identify as IEN - 4528

Tog-L-Lok is a new window cleaning squeegee composed of a two part channel, a clamping handle and the rubber element. The channel parts are made of brass that lock together after the rubber has been inserted so it is held firmly with no need to pull or stretch. Sizes range from 6 to 18 in. in length. Manufacturer is Tog-L-Lok Co., 314 Postal Bldg., Dept. IEN, Portland 4, Oregon. Price range is $31.80 to $39 per dozen. The rubber element is a patent pending design. It can be used on all four edges. A chamois is not required to wipe it.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4529

MET-L-WOOD METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:
- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below... Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

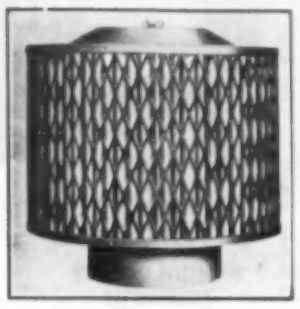
Met-L-Wood is metal bonded to plywood — permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood... opening new horizons to structural designers"

If you write maker identify as IEN - 4530

FILTERING . . Air intake unit for small engines and compressors

Source: AMERICAN AIR FILTER CO.
215 Central Ave., Dept. IEN, Louisville 8, Ky.



Bulletin 135

Rayon flock is bonded to 14-mesh galvanized wire screen to make up the filter element in this new Type-FS air intake unit. The adhesive is a thermoplastic material, impervious to gasoline and solvents. Operation can be dry or oil coated. In the latter case, the dust holding capacity is comparable with that of a viscous type filter.

An inner perforated screen baffle equalizes the air flow and protects against back-fire. A weather shield is available for outdoor installation. Seven sizes range from 50 to 800 cfm.

If you write maker identify as IEN - 4531

SEALING . . Synthetic compound for concrete construction and repair

Source: PRODUCTS RESEARCH CO.
3126 Los Feliz Blvd., Dept. IEN, Los Angeles 39, Calif.

Permanent bond

Water tight expansion joints can be made in new concrete construction, and in repair operations, by application of the new PR-395-HT Thiokol base compound. Application is by an extruding gun or spatula. The material will hold position in vertical and overhead joints as well as in floors. It bonds to the concrete and forms a water proof barrier. A companion material, PR-395, is poured into horizontal joints as in floors. The material is elastic. It stretches, compresses, flexes.

If you write maker identify as IEN - 4532

STRAPPING . . Cutting tool for steel strap to ¾ by 0.035 inch

Source: A. J. GERRARD & COMPANY
1950 Hawthorne Ave., Dept. IEN, Melrose Park, Ill.

Tool steel blades

Steel strap can be precut to desired lengths. Strap previously applied on containers can be cut and salvaged with this new plier type tool. It measures about 9 in. in length, weighs a little under 1 pound. Its blades can be resharpened and the head can be employed to close Steelbinder seals to secure strapping.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4534

COUNTING . . Inspection instrument compares "accept" and "reject" totals

Source: AMERICAN HYDROMATH CO.
25-20 43rd Ave., Dept. IEN, Long Island City 1, N. Y.

For quality control

Four counters, wheel type electrically actuated, are mounted two on each side of a central scale on the face of this new Quali-Count instrument. The two to the left are for accepted work. The two to the right are for rejected work. The upper two, one on each side, are for totals of a run. The lower two are for sub-totals. The chart in the center lists, for an average defective rate, the maximum number of rejects that can occur in the course of different quantities of accepted production. This chart can be made to suit individual quality requirements.

The instrument is operated by pressing push buttons at the base of each column or by operating knee, foot or conveyor line switches. Inspection of the counters and the chart indicates whether the production is statistically in or out of control and, by checking the two lower counters, the instrument will tell whether or not the production is beginning to go out of control. Operation is on 110-volt alternating current.

If you write maker identify as IEN - 4535

TESTING . . Volt-ammeter accurately covers complete audio range

Source: CHARLES ENGELHARD INC.
850 Passaic Ave., Dept. IEN, East Newark, N. J.

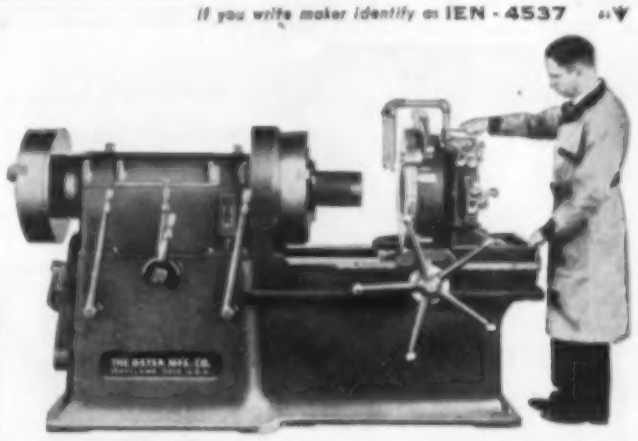
For precise readings

Multi-range measurements can be made at frequency from 20 to 20,000 cps. by this new Hermach-Englehard volt-ammeter to an accuracy of 0.05 per cent. The instrument is independent of frequency so ac. voltage or current can be measured over a wide range. The one instrument can replace a considerable number of standard instruments to provide accurate readings at all frequencies.

The instrument is employed with a separate potentionmeter, a built-in null-reading galvanometer, an internal dc. "bucking" circuit, resistors for voltage measurements and shunts for current readings. The measured ac. voltage depends only on the product of the potentiometer reading and a ratio of resistance. The instrument includes a carrying case.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4537



The OSTER "RAPIDUCTION"

FAST AND ACCURATE

The Oster No. 6A "Rapiduction" is designed for large-scale production threading. Its many spindle speeds allow every size of pipe to be threaded at maximum speed. Throughout its entire standard pipe range of 1" to 6" and bolt range of 1" to 4" die-head change is never necessary. From machine bed to die-head the "Rapiduction" is quality built.

For the full story on the complete line of Oster threading machines see your local Oster Distributor.

THE OSTER MANUFACTURING CO.
Main Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

Builders of Cost Reducing Threading Equipment since 1893

If you write maker identify as IEN - 4538

ILG Fans and Ventilators ...via Graybar

ILG-built, self-cooled motors assure uninterrupted service...offer the low operating cost of an open-type motor *plus* the protective features of a fully-enclosed unit. Cooled by fresh outside air, ILG units won't gum up...save up to 10% on power costs. Your local Graybar Representative will provide complete information on the ILG propeller fan, centrifugal fan, ventilator or blower for your needs.

FREE INDUSTRIAL VENTILATION GUIDE

Write today for this helpful 26-page booklet containing complete air change tables, application illustrations and specification data. It will simplify your selection of ventilating equipment. *Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.*

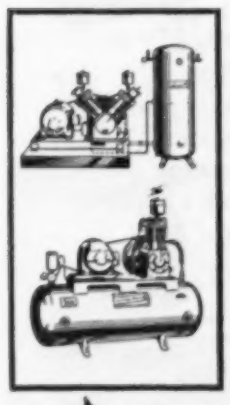
Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

420-124

If you write maker identify as IEN - 4533

MORE FREE AIR PER HORSEPOWER

Kellogg-American



AIR COMPRESSOR PUMPS, ½ TO 20 HP
Engineered and precision built to give more *free air* (actual air delivered) per hp, Kellogg-American compressors assure maximum air delivery, efficiency and service life. Single or two stage, 1, 2 or 4-cylinder units available for pressures up to 200 psi; displacements to 105.9 c. f. m.

COMPLETE AIR COMPRESSORS, ½ TO 20 HP
Portable or stationary; skid, remote tank or tank mounted; electric motor or gas-engine-driven models permit you to select the most efficient, economical compressor for every job. Write Dept. I N-2 for Bulletin K-307.

FREE New slip-stick selector to help determine the right Kellogg-American air compressors for your needs. Send for yours on company letterhead today.

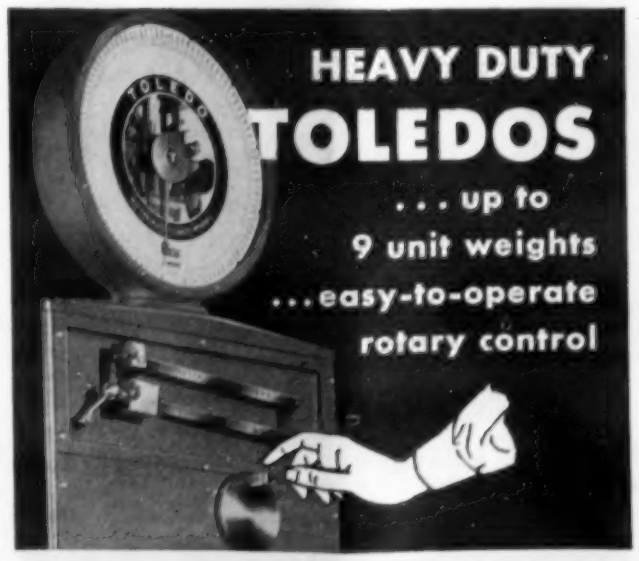
KELLOGG DIVISION
ROCHESTER 9, N. Y.

AMERICAN Brake Shoe COMPANY

Kellogg-American

½-20 H P AIR COMPRESSORS · PAINT SPRAY EQUIPMENT

If you write maker identify as IEN - 4536



Now you can have as many as 9 unit weights—each equivalent to the dial—in the new Toledo cabinet heads! This means a dial as low as one-tenth total capacity of scale can provide wide indicator travel on small loads, without sacrificing high total capacity for the scale. A convenient rotary control operates the unit weights—no lever to lift. Available in heavy-duty floor, built-in, hopper, monorail, motor truck and other types.

Many more new features in great new line of Industrial Toledos . . . 44 ways better! Send for new catalog. Toledo Scale Co., Toledo 1, Ohio.

TOLEDO®
HEADQUARTERS FOR SCALES

If you write maker identify as IEN - 4539

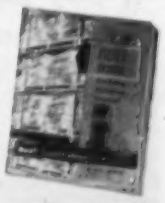
LET US SHOW YOU HOW TO

CUT WAREHOUSING COSTS . . . as much as 75%

Paltier STORAGE SYSTEM

PALTIER records are filled with proof after proof of storage cost cuts in the handling of every conceivable type of product. We can cut your storage costs, too!

ASK US:
- PALTIER studies your storage problem—engineers and designs a system for your specific needs.
- Many PALTIER installations pay for themselves "right from the start."
- This booklet tells the PALTIER story, ask for it today.



THE PALTIER CORPORATION
1711 KENTUCKY ST.
MICHIGAN CITY, IND.

If you write maker identify as IEN - 4540

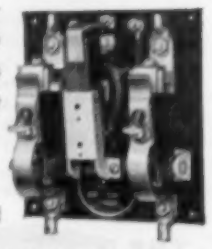
Zenith

Performance . . .

Zenith means "highest point." This literally describes Zenith dependability, "on the dot," as shown by records of long trouble-free, maintenance-free service in widest range of control uses.

Zenith automatic controls

Cover the field: Magnetic Contactors, Remote Control, Reset, Interval and Process Timers, gearless, clutchless Impulse Timers, Program Clocks —also special equipment for your special needs.



WRITE NOW FOR COMPLETE CATALOG!

See classified telephone directory for name of local distributor

ZENITH ELECTRIC CO.
146 West Walton Street Chicago 10, Illinois

If you write maker identify as IEN - 4541

REPAIR CONCRETE PLANT FLOORS by SAWING BEFORE BREAKING

. . . with a Clipper CONSAW

Save up to 50% in labor and material. Saw repair patches—saw gas, water, conduit, and air line trenches in floors, runways and streets. Stops cracking and spalling—stops high maintenance costs.

. . . It's Yours on **FREE TRIAL**

Our Only Business for Nearly **20 YEARS . . . MASONRY and CONCRETE SAWING!**

The unqualified Clipper guarantee of satisfaction is backed by world wide experience, the ability to select the finest materials and the "know-how" to put them together

. . . by the **MASONRY SAW Originators**

Every shape and size refractory **cut in seconds!** Perfect fitting refine jobs that last longer—cost less. A Clipper Model to fit any job—any budget SOLD ON FREE TRIAL

MODEL HD 15 MODELS PRICED FROM $265

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

CLIPPER SUPERIOR DIAMOND BLADES

. . . guaranteed to . . . "Consistently Provide the fastest cut . . . at the lowest cost . . . with the greatest ease!" Clipper alone can supply every necessary metal bond . . . in over 36 specifications.

Clipper MANUFACTURING CO.
• CINCINNATI • ATLANTA • BOSTON • DETROIT • WASHINGTON, D.C. • PITTSBURGH • CHARLOTTE, N.C. • NEW YORK • PHILADELPHIA • BIRMINGHAM • CLEVELAND • DENVER • ST. LOUIS • LOS ANGELES • CHICAGO • INDIANAPOLIS • HOUSTON • ST. PAUL • AUSTIN, TEXAS • MILWAUKEE • SAN FRANCISCO • DALLAS
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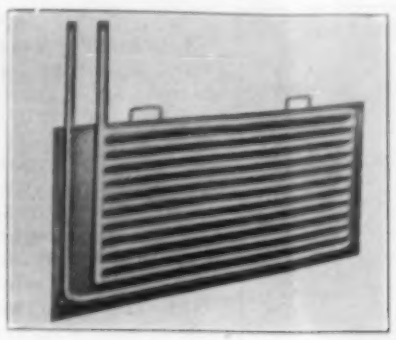
COMPANY ____
ADDRESS ____
CITY ____ STATE ____

If you write maker identify as IEN - 4543

HEATING . . Embossed metal plates to carry a heating or cooling medium

Source: DEAN PRODUCTS INC.
616 Franklin Ave., Dept. IEN, Brooklyn 38, N. Y.



Bulletin 202

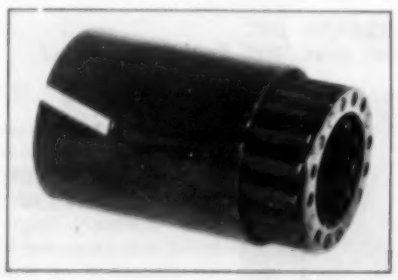
Thermo-Panel Plate Coil is a new welded assembly of two embossed steel plates or one embossed and one plain plate to make, in effect, a return bend pipe coil. Length and width are to specification. Single embossed assemblies are $\frac{9}{16}$ in. in thickness. Double embossed units are 1 inch. Flanges are 1 in. in width but can be supplied to specification in widths to 2 in. or larger.

Construction is in cold rolled steel, Type 316 stainless steel or other stainless steel alloys as well as materials that can be spot or seam welded on resistance equipment. Three widths are 12, 18 and 22 in. in stock sizes. Length ranges from 23 to 119 inches. Surface area is 4.2 to 41.5 square feet. Construction, in 14-gage cold rolled steel, ranges from $31 to $78.50. Stainless steel, 16 gage, ranges from $94 to $414.50. These sizes and prices apply to Type AP, as shown in the illustration.

If you write maker identify as IEN - 4544

BEARING . . Straight roller design is employed without any inner race

Source: ROLLWAY BEARING CO.
Seymour St., Dept. IEN, Syracuse 4, N. Y.



Assembles readily

Alloy steel solid hardened rollers, with integral pin ends, are mounted between hardened steel end rings inside a hardened steel split outer sleeve in this new roller bearing. The outer sleeve compresses to bring its V-shaped joint into closed position when it assembles in a machine bore. The rollers ride direct on the shaft inside the outer race.

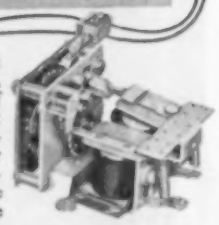
The bearing is suited for heavy duty performance at speeds to 1,000 rpm. It is available in 25 to 140-mm. bore by 52 to 250-mm. outside diameter. Width starts at 15 mm. and is maximum at 3¼ inches.

If you write maker identify as IEN - 4545

Brite-Line is a new white-green fluorescent pencil. It makes an invisible line on white or light surfaces but fluoresces a brilliant green in the presence of Blacklight. The pencil can be employed for invisible instruction or identification. It measures 7 in. in length, has a $\frac{3}{16}$-in. fluorescent lead compounded of a wax and stearate base. Maker is Norco Mfg. Co., 392 Bleecker St., Dept. IEN, New York 14, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4546



SERIES M.E.R. Guardian Midget Electrical Reset Stepper keeps the reset magnet open, allows the ratchet to reset freely on a pulse of 10 milli-seconds. Stepping magnet releases lock mechanism on first step to ready unit for recycle. Standard unit has one disk with one finger rotating counter-clockwise. Two fingers available. Up to 21 of total 24 points on disk are active. Rated at 10 steps per second. Voltage ranges: 6 v. to 115 v. A.C., 60 cycles, or 6 v. to 110 v. D.C. Auxiliary small combination contact switches can be mounted on ratchet or on either magnet. New 3-point mounting for easy installation.

SERIES M.A.S. Stepper. A compact dependable Add and Subtract unit.
SERIES M-120 Stepper. Up to 3 position contact combinations.

Write for catalogs featuring Guardian Steppers, Relays, Solenoids, Switches, Solenoid Contactors and Hermetically Sealed Controls.

GUARDIAN ELECTRIC
1620-D W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 4547

Ceilcrete FOR FLOORS, TANKS AND TRENCHES

A NEW ACIDPROOF COATING FOR CONCRETE

CEILCRETE surfacing provides the same protection as more costly acidproof brick in most applications. It hardens to a stone-like surface which withstands trucking, foot traffic and erosion from hot solutions and steam. CEILCRETE floors have four times the load carrying strength of ordinary concrete. CEILCRETE is easily applied by troweling to all types of concrete surfaces: flooring . . . pipe, tank and trench lining . . . cement block . . . walls . . . pump bases . . . waste disposal systems. Available as materials or a complete job on contract basis.

- ACIDPROOF
- ALKALIPROOF
- SOLVENTPROOF
- HIGH IMPACT STRENGTH
- ABRASION RESISTANT
- EROSION RESISTANT
- NONSPARKING
- NONSLIP
- ADDS NO WEIGHT

1860-CC

Write today for illustrated Bulletin 110

THE CEILCOTE CO.
CORROSION PROOF MATERIAL AND CONSTRUCTION
4840 RIDGE ROAD CLEVELAND, OHIO

If you write maker identify as IEN - 4548

Southco Drive Rivet Fastening . . . in blind or access applications . . . is quick and economical. One man, with only a hammer, does the job. Just hit the pin . . . the rivet's in. No other operations are needed . . . no bucking up . . . no finishing off . . . no special tools. Time and labor savings are substantial.

Parts are forced tightly together by the rivet's powerful "pull-up".

Spot the fastening applications in your production line that can benefit by the use of Southco Drive Rivets. Let a Southco engineer figure the time that can be saved. There's no obligation. Write for complete information to Southco Division, South Chester Corporation, 241 Industrial Highway, Lester, Pa.

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SOUTHCO FASTENERS

PAWL • SCREW AND SPRING • DRIVE RIVETS
ANCHOR NUTS • ENGINEERED SPECIALTIES
OFFICES IN PRINCIPAL CITIES

WHEREVER TWO OR MORE PARTS ARE FASTENED TOGETHER, STANDARD AND SPECIAL DESIGNS FOR IMPROVED PERFORMANCE AND LOWER PRODUCTION COSTS

If you write maker identify as IEN - 4550

TRI-LOK

Each Tri-Lok step consists of a panel of Rectangular, Diagonal, or U-type Tri-Lok flooring in any desired width, length, depth, and bar spacing.

SAFE—checker plate nosing bars make each step stand out clearly. Abrasive edging also available.

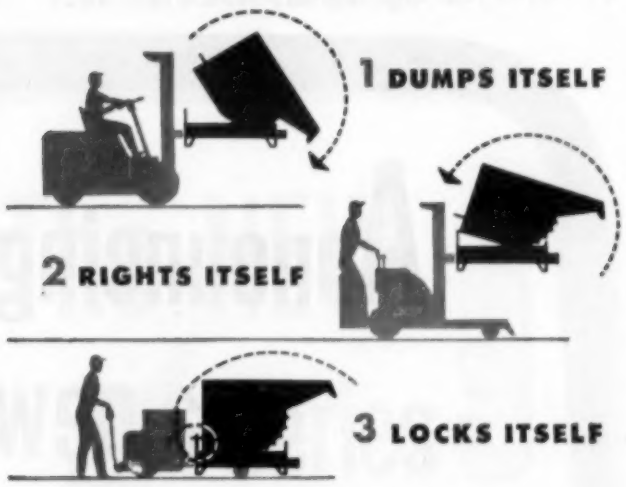
CLEAN—clogless, rivetless Tri-Lok joint prevents accumulation of dirt, moisture, rust.

STRONG—added strength provided at maximum load contact by shape and rigidity of nosing bar.

Write today for bulletin PK-1103

DRAVO CORPORATION
National Distributor for the Tri-Lok Company
Dravo Building, Pittsburgh 22, Pennsylvania
Sales Representatives in Principal Cities

If you write maker identify as IEN - 4551



makes every truck a dump truck!

Fits securely on any standard fork or platform lift truck . . . can't slip off. Pick-up is quick and easy. Insures fast, efficient handling of any wet or dry, hot or cold bulk materials. *Cuts hand unloading by at least 50%* . . . with maximum safety.

This rugged Roura Self-Dumping Hopper is built like a battleship . . . extra heavy gauge welded construction . . . to withstand the terrific knocks and bangs of rough usage. Good for years of dependable service. Available in sizes from ½ to 2 cubic yards.

Thousands of these time-and-money-savers are now in use by America's biggest industries. Let us show you how they can help cut your costs, too. Write today for more information. ROURA IRON WORKS, INC. 1409 Woodland Ave., Detroit 11, Mich.

ROURA
Self-Dumping
HOPPER

If you write maker identify as IEN - 4552

IMPERIAL *Tubing Tools*

. . . The Tools that Experts Depend on for Faster and Better Work

HI-DUTY TUBE CUTTER
Free wheeling ball bearing action. Roller type with flare cut-off groove. Retractable reamer. **No. 274-F** for ⅛" to 1" tubing. Other models. Also saw-ing vises.

FLARING TOOLS
All types, for making 45°, 37° and double flares . . . on copper, aluminum, steel and stainless steel tubing. **No. 500-F** Flaring Tool, illustrated, makes 45° flares and then burnishes them.

TUBE BENDERS
Lever-type, gear-type and spring-type benders for bending all kinds of tubing. Illustrated is **No. 364-F** individual lever-type bender. Also models that take a wide range of sizes.

See Your Supply House
Ask for Catalog No. 3011

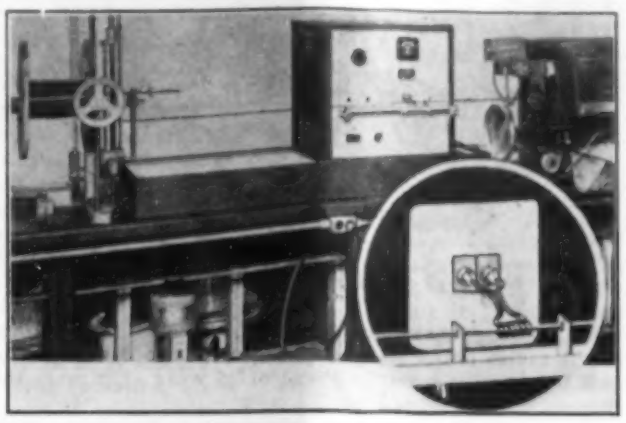
THE IMPERIAL BRASS MFG. CO., 508 S. Racine, Chicago 7, Ill.
In Canada: 334 Lauder Ave., Toronto, Ontario

IMPERIAL Pioneers in Tube Fittings and Tube Working Tools

If you write maker identify as IEN - 4553

HEATING . . Induction equipment bonds wire strands to prevent fraying

Source: LEPEL HIGH FREQUENCY LABORATORIES INC.
55th St. & 37th Ave., Dept. IEN, Woodside 77, N. Y.



To minimize manual effort

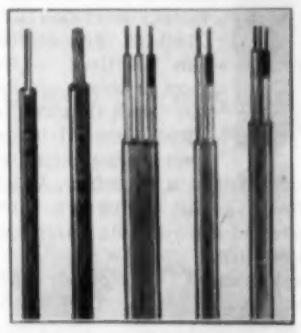
Illustrated is new application of one of the company's electronic induction heating units with a special coil element through which insulated stranded wire feeds from a reel to a cutting and stripping machine. The heating coil circuit is synchronized with the operation of the cutting machine so it will heat the wire in order to bond the strands at correct intervals.

The cut-off machine then cuts off through the center of the bonded section so both ends of the cut are solid and no dip tinning is required prior to assembly operations. The induction coil burns through and melts the insulation, or chars it, so clean removal presents no problem at the cut-off machine.

If you write maker identify as IEN - 4554

CONDUCTOR . . Electric cable for use in branch and feeder circuits

Source: ROME CABLE CORP.
440 Ridge St., Dept. IEN, Rome, N. Y.



Bulletin RF-1

FlexAll trade names a new insulated cable in single and multiple conductor assemblies, the former in sizes from 14 to 4 AWG, the latter in sizes from 14 to 10 AWG. The two-conductor design is available plain or with a ground wire. The single conductor design has integrally applied insulation and sheath of Synthinol Type-TW thermoplastic compound. The two and three-conductor cables are insulated with the same compound and, in addition, employ glass yarn wrap on the individual conductors. An external sheath of Synthinol provides resistance to abrasion, moisture, corrosion and flame.

Applications include branch and feeder circuits buried directly in the ground, when provided with suitable overcurrent protection. The multiple construction is suited for interior wiring, either exposed or concealed, and can be employed in wet or corrosive locations, in hollow spaces of masonry block or tile walls, embedded in plaster or channel in masonry, when suitably protected.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4555

FREE DOWEL PIN BULLETIN

Tells How to Save Assembly Time!

DOWEL PINS

- Accurately hardened—will not upset!
- Precision ground to limits of ±.0001"
- Two complete size ranges—standard and oversize
- Tapered lead end—easy to drive

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue
Chicago 50, Illinois

Complete Data!
Send For This Free Bulletin Today!

If you write maker identify as IEN - 4556

Sylphon Control No. 999-T, used in Bonderizing operation at Modern Tool and Die Co., Cleveland, Ohio.

Saves a man's time . . . and his skin

● Use of hand thermometers in checking temperature of tanks of hot acid or water is risky. Sylphon Temperature Regulators eliminate danger *and* guess-work. Installed in the steam line, they assure automatically controlled, constant temperature. There's a Sylphon Regulator for practically every temperature or pressure control need, to help improve your operations. Write for Catalog GN-D.

Robertshaw-Fulton
CONTROLS COMPANY
FULTON SYLPHON DIVISION • KNOXVILLE 1, TENN.

If you write maker identify as IEN - 4557

new JOHN CRANE mechanical seal with TEFLON*

Solves Corrosion and Temperature Problems...

With the new Type 9 John Crane Mechanical Seal, proper sealing of chemicals and corrosive liquids is no longer a factor. Its flexible wedge and sealing rings are molded of the remarkable new plastic Teflon, which is not affected by any industrial chemical.

The successful development of two years research and field testing, this revolutionary seal handles corrosive liquids never before controlled effectively by conventional, flexible type mechanical seals. Thus, John Crane designing experience is effectively combined with the unique properties of Teflon: chemical inertness, extremely low friction and high heat resistance. Type 9 Seal can be employed at temperatures up to 500°F.

SEND FOR BOOKLET: *containing full details on the Type 9 Seal.*
Crane Packing Co., 1815 Cuyler Ave., Chicago 13, Ill.
In Canada: *Crane Packing Co., Ltd., 617 Parkdale Ave., N., Hamilton, Ont.*

**DuPont's trademark*

JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as IEN - 4558

HOW TO INSURE TOP METALWORKING PERFORMANCE

for only **$1.00**

Send for a trial order of

CMD ANTI-SCORING LUBRICANTS

For top performance on lathe centers, grinding, press fit, stamping, die posts and many other operations—CMD ANTI-SCORING Lubricant can't be beat. It makes your operations smoother, faster, easier and of course more profitable. Prevents scoring, seizing, galling . . . all bugaboos in modern machining work. This trial order will start *you on your* way to top performance where a high pressure lubricant is needed. You will be surprised to find how long it lasts. Get yours today in both oil and grease consistencies.

TRIAL ORDER—TWO FOUR OZ. TUBES $1.00

Send me my order of CMD Lubricants right away! { Bill me / Bill my company

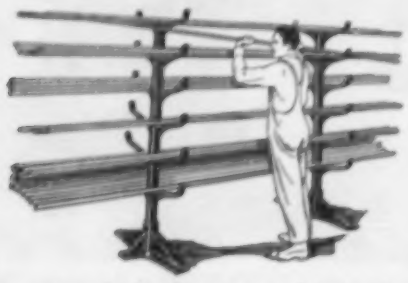
Name _____
Company Name _____
Address _____
City _____ State _____

Chicago Manufacturing and Distributing Company
1904 West 46th St., Chicago 9, Illinois

CHICAGO MANUFACTURING & DISTRIBUTING CO.

If you write maker identify as IEN - 4559

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

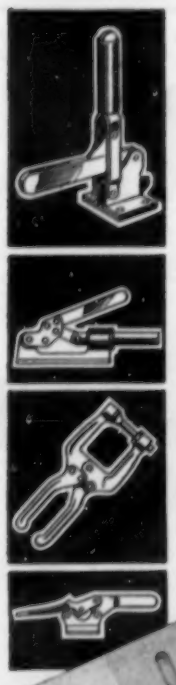
Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 4560



WESPO

TOGGLE CLAMPS

Hardened steel bushings and pins provide for longer wear—eliminate elongated holes and pin shearing.

A CLAMP FOR EVERY WORK HOLDING NEED

35 Sizes Available

WESPO TOGGLE CLAMPS are engineered and constructed for positive holding and light, medium and heavy clamping.

Write Today for Free Bulletin

West Point Mfg. Co.
26941 W. SEVEN MILE RD. DETROIT 19, MICHIGAN

If you write maker identify as IEN - 4561

CUT IT OUT!

Cut what out?

any KEYWAY in any of your gears, milling cutters, pulley hubs, collars, couplings — *any* size from 1/16" to 1", in *any* bore from 1/4" to 3"

Cut it out *fast* — sixty seconds per keyway

Cut it out *cheap* — as little as 1¢ per keyway

CUT OUT THIS COUPON *for the facts, man, the facts!*

The du MONT CORPORATION, Greenfield, Mass.

Rush new Catalog and Price list N—on *Minute Man* Keyway Broaches and Kits, to

Name .....

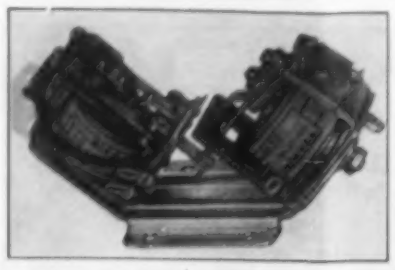
Company .....

Address .....

If you write maker identify as IEN - 4562

RELAY . . Latching assembly for electrical control applications

Source: **LEACH RELAY CO.**
5915 Avalon Blvd., Dept. IEN, Los Angeles 3, Calif.



Note angle mounting

Type 9177 with double-pole double-throw contacts, and Type 9179 with four-pole double-throw contacts, are new latching assemblies of control relay in the company's line. The design is resistant to vibration and shock and employs angle mounting of the coil mechanisms. A new wedge action employs latch faces with a slight radius plus end-to-end operation of the latch mechanism for positive action independent of wear or play in the armature hinge joints.

Standard coils are varnish impregnated. The frame, base and bracket are electroplated. Contact rating is 8 amp. on 110-volt ac. Maximum coil rating is 120 volt 60-cycle ac. or 120-volt dc. Overall dimensions are about 3¾ by 1¾ by 1⅞ inches. The coils are available for continuous or intermittent duty with resistance maximum at 10,000 ohms.

If you write maker identify as IEN - 4563

TUMBLING . . Two-barrel assembly has chutes to separate work and liquid

Source: **RAMPE MFG. CO.**
3320 St. Clair Ave., Dept. IEN, Cleveland 14, Ohio

Chutes tilt

Movable chutes have been assembled beneath the hexagon steel barrels of the company's two-barrel tumbling machine, previously described IEN-2189-53. The chutes can be tilted to the rear to drain off liquid. Then they can be tilted forward to deliver a completed load to a container. While the chutes are tilted to the rear, they form guards around the rotating barrels so no enclosing cabinet or cover is required.

The twin barrels have load capacity of 1.1 cu. ft. each. They can be supplied plain or lined with vinyl plastic. Drive is by a ¾-hp. 220/440-volt three-phase motor. Control centers at a water proof starting button on the front of the housing.

If you write maker identify as IEN - 4564

Microfyne Graphojet is a new combination of the company's lubricating flake graphite and a polyethylene container. Size is 3 ounces. Squeezing the container delivers a controlled jet of dry lubricating graphite that will not burn, freeze, drip, dry out, run or melt. Maker is Joseph Dixon Crucible Co., 167 Wayne St., Dept. IEN, Jersey City 3, N. J.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4565

ARO 1000 pound AIR HOIST

SPEED...
Lift rate . . . over 40 ft. per minute!

SIZE...
Overall length 10¼" weighs only 28½ lbs.

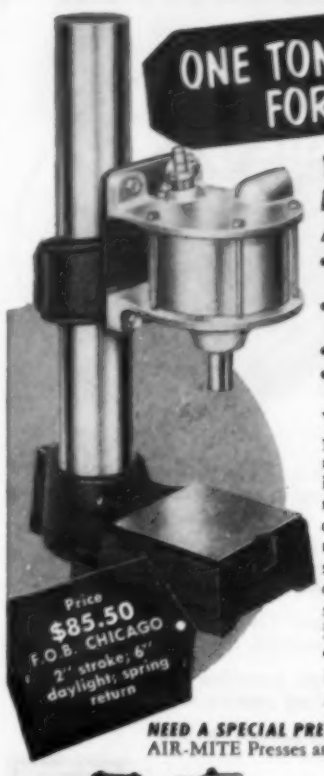
SAFETY...
Betters all safety requirements!

Write for full details.
The Aro Equipment Corporation
Bryan, Ohio
Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd. Toronto, Ont.

ARO AIR HOIST

Also . . . Air Tools . . . Lubricating Equipment . . . Aircraft Products . . . Grease Fittings

If you write maker identify as IEN - 4566



ONE TON AIR PRESS FOR $85.50?

YES—AND YOU CAN'T BEAT IT FOR QUALITY!

Air-Mite Air Arbor Press Features:

- **Solid Steel Column—greater strength, rigidity**
- **Brass Cylinder, Aluminum End Castings, Neoprene Piston Cups**
- **Accurately ground 5" x 5" table**
- **Quick set-up and stroke adjustment for maximum flexibility**

You get more for your money when you choose AIR-MITE—more press, more utility and more production. Built by air press specialists to meet the demand for a low cost unit that could stand the gaff of high production work, AIR-MITE presses will show you quality, efficiency and economy you never thought possible at their price. Made in ¼, ½, ¾ and 1 ton capacities with spring or air return.

Write for complete catalog on AIR-MITE Presses and Air Cylinders.

Price **$85.50** F.O.B. CHICAGO • 2" stroke; 6" daylight; spring return

NEED A SPECIAL PRESS? Many special adaptations of AIR-MITE Presses are available. Write us your needs.

AIR-MITE

4419 W. CARROLL AVENUE • CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 4567

Announcing a new DUMORE Series 9 Handgrinder

Voltage — 115V, 230V AC-DC
Current — 3.1 amps
Horsepower — ¼
Speed, no load — 15,500 rpm
Duty cycle — continuous
Bearings — ball
Winding connection — series
Ventilation — internal fan
Temperature rise — 40° C
Finish — grey
Weight of complete unit — 6 lbs., 14 oz. with cord, 6 lbs., 8 oz. less cord
Length including wheel guard — 16⅝", 17¾" with chuck
Small dia. — 1 21/32" ave.
Body dia. — 3½"

New, Too!

All-new Series 35 Dumore Handgrinder

Here's a "midget miller," with speeds to 35,000 rpm, for use with tungsten carbide mills, high-speed cutters, mounted wheels and points, abrasive bands, etc.

DUMORE PRECISION TOOLS

The Dumore Company
1319 Seventeenth Street • Racine, Wisconsin

Builders of precision line of Grinders, Automatic Drill Heads, Tool Post Grinders, Drill Grinders, Light Drilling Equipment, Flexible Shaft Tools, Hand Grinders, Fractional hp Motors and Gear Motors.

If you write maker identify as IEN - 4569

Left— Union Special Style 20100 H Bag Closing Machine

Here's how to close **MULTIWALL PAPER BAGS**

FOR lower production costs ... stronger, neater closures ... ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

SEND FOR THIS BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 410 North Franklin Street, Chicago 10, Illinois

UNION SPECIAL

If you write maker identify as IEN - 4570

The NEW Series 9 Handgrinder

. . . for heavy-duty production jobs such as cleaning castings and weld seams, spark testing steel, polishing and grinding heavy and irregular work.

COMPACT and well balanced, the new Series 9 is powered by a ¼ hp continuous-duty-rated Universal motor which develops 15,500 rpm. Available for 115V or 230V, DC or AC, 0-60 cycle operation. It weighs only 6 lbs., 14 oz. It features quality construction throughout. Three precision bearings are seated in steel inserts integrally cast into the grinder housing assure long life and accuracy.

For facts on the three new Dumore handgrinders, see your industrial distributor or write—

New, Too!

The Dumore Super-10 Precision Handgrinder

. . . for both tool and die work where accuracy is a must and production bench work where full shift production is necessary.

DUMORE PRECISION TOOLS

The Dumore Company

1319 Seventeenth Street • Racine, Wisconsin

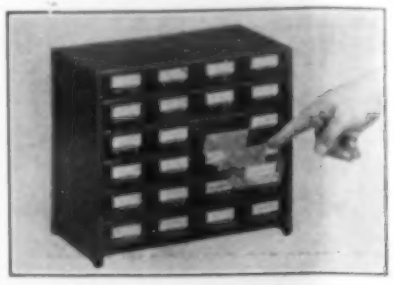
Builders of precision line of Grinders, Automatic Drill Heads, Tool Post Grinders, Drill Grinders, Light Drilling Equipment, Flexible Shaft Tools, Hand Grinders, Fractional hp Motors and Gear Motors.

"See Us At The ASTE Show Booth 739"

If you write maker identify as IEN - 4572

STORING . . Small parts cabinet, clear plastic drawers in steel housing

Source: FIDELITY PRODUCTS CO. 2817 Third St., N. W., Dept. IEN, Canton 8, Ohio



Small Parts Organizer

Styrene clear plastic drawers measure 2⅞ by 1¼ by 5¾ in. in this new Jiffy cabinet. Each drawer divides into two or three compartments by employing divider strips furnished for this purpose. The front of each drawer also is slotted to take an index label. The drawers ride on bottom runners and are fitted with catches so they cannot be pulled all of the way out accidentally.

The cabinet is made of steel with a metal back, key hole punched, to hang on a wall as well as to stand on a bench. Colors are red or gray. Prices, post paid, are about $8 for the 16-drawer unit, $10 for the 24-drawer assembly, $14 for the 32-drawer assembly and $22 for the 48-drawer unit.

If you write maker identify as IEN - 4573

PAINTING . . Flat wall finish, alkyd type, self sealing, quick drying

Source: PITTSBURGH PLATE GLASS CO. 632 Duquesne Way, Dept. IEN, Pittsburgh 22, Pa.

Color chart on request

Wallhide PBX is a new flat wall paint with which previously painted surfaces can be covered evenly using one coat. No primer is required since the new material is self-sealing. It can be applied with a brush or roller. It dries to a tough finish that can be washed and scrubbed without marring or fading its color. The film seals against soot, dirt, grease, stains. It is available in 12 ready-mixed colors in quarts, gallons and 5-gallon containers.

If you write maker identify as IEN - 4574

WASH ROOMS . . Hot air blower replaces towels to dry hands and face

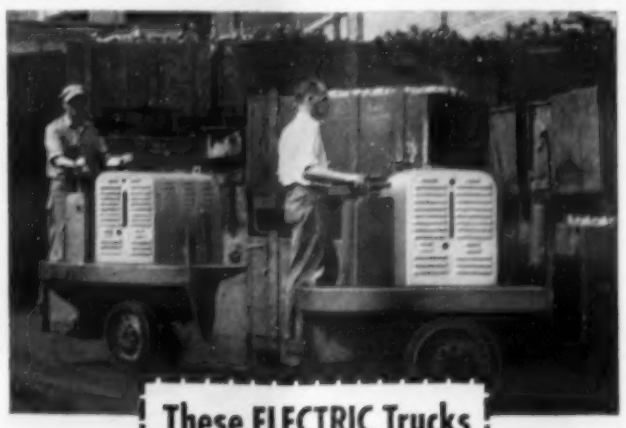
Source: ELECTRIC-AIRE ENGINEERING CORP. 209 W. Jackson Blvd., Dept. IEN, Chicago 6, Ill.

Ask for Catalog

Air is drawn into the housing of this new Model-C Hand Dryer by a motor driven blower. It is heated electrically and then is delivered through a protected opening at the front. Construction includes an air filter, touch action starter bar, revolving air baffle, electric lighted instructions and tamper proof assembly. Mounting is on a wall.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4575



These ELECTRIC Trucks Will Never be "Down" due to Lack of Power!

Only electric industrial trucks give you the advantage of interchangeable power so that trucks can work while power units are being serviced. With Ready-Power drive you get a double advantage: (1) The quick interchangeability of electric power units, (2) The constant full power of gas-electric or Diesel-electric drive. Write for information.

READY-POWER

The READY-POWER Co.; 3830 GRAND RIVER AVE., DETROIT 8, MICH.

Manufacturers of Gas and Diesel Engine Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

---

If you write maker identify as IEN - 4576

UNIVERSAL DRILL BUSHINGS OUTLAST THEM ALL!

Machined from high quality steel. Superhoned bores reduce wear. Blended radius helps prevent tool hang-up and breakage. 100% concentricity and hardness tests insure accuracy and uniform quality. Available in a complete range of standard sizes and lengths. Orders for special dimensions promptly handled. Write for complete information.

180-A

UNIVERSAL ENGINEERING CO.
FRANKENMUTH 6, MICHIGAN

If you write maker identify as IEN - 4577

When they're GOODYEAR INDUSTRIAL TIRES they're Job-Fitted!

See Your Goodyear Dealer for America's most complete line of Industrial Tires

Solid Fact for Solid Users
Get Goodyear's Xtra Cushion Solid Tire in All Service Tread (shown above) for top traction plus greater cushioning.

ANY plant maintenance records will quickly prove this: *A makeshift industrial tire that's wrong either in tread, compound or size leads to early tire failure.*

And to stop this waste, more and more plant operators are turning to their Goodyear Dealer for the right tire for the right job.

You'll find this trouble-shooter can job-fit your operation, too. He has over 100 different solid tire sizes plus a complete line of pneumatics and semi-pneumatics. All can be compounded in either UNiversal chip-resistant or Neoprene oil-, acid-, *and* chip-resistant compounds. What's more, your Goodyear Dealer will specify the most efficient tread – smooth, grooved, All Service or the famous All-Weather – for your plant's floor surfaces.

For free job-fitted tire recommendations in your plant, call your Goodyear Dealer or write:

Goodyear, Industrial Tire Sales,
Akron 16, Ohio.

USE THE RIGHT TIRE FOR THE RIGHT JOB—USE

GOODYEAR INDUSTRIAL TIRES

Xtra Cushion, All-Weather, All Service—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

If you write maker identify as IEN - 4579

Won't Smudge!

LABELON PLASTIC

RESISTS: DIRT GREASE WATER ACIDS

Write on it TAPE

STICKS WITHOUT MOISTENING

LABELON TAPE sticks without moistening to any smooth, dry surface—yet strips off cleanly. Write or print on it with pencil, stylus or typewriter. Message WON'T SMUDGE . . . defies dirt, grease, water, acids . . . stays clean, easy-to-read—because writing surface is protected by transparent plastic! Available in rolls—or in flat form on backing sheets for typewriter use.

Use Labelon "Write on it" Tape to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for marking laboratory equipment, supplies, experiments; for panel boards or wiring; for office files, folders, etc.

For samples and prices, see your nearest dealer or write Dept. IEN-4

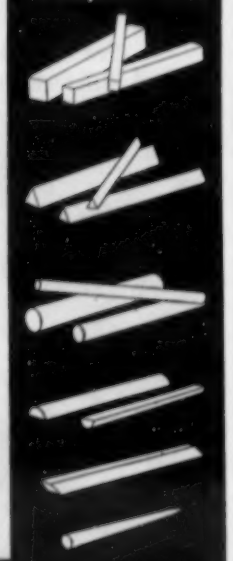
LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 9, N. Y.

If you write maker identify as IEN - 4580

For close tolerances...Machinists, tool and die makers insist on

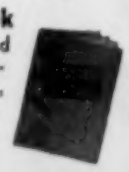
INDIA & HARD ARKANSAS Oilstone Files

35 shapes 97 sizes



• For really close work on dies, tools, and parts, and for such jobs as deburring, radiusing, and chamfering, there is nothing finer than an INDIA or HARD ARKANSAS Oilstone File. Experts always have these famous files on hand. They cut fast and accurately to amazingly close tolerances. And there's a size and shape to fit any job. INDIA Oilstones come in three grits: Coarse, Medium and Fine. For the ultimate in superfine finishes, get HARD ARKANSAS Files. You'll have the finest available when you order these files from your distributor.

Get this helpful book on the advantages of hand stoning cutting tools. Address Behr-Manning Corp., Troy, N. Y., Dept. IEN-4.



BEHR-MANNING
division of NORTON Company

▲COATED ABRASIVES
▲SHARPENING STONES
▲PRESSURE-SENSITIVE TAPES

If you write maker identify as IEN - 4581

Enjoy THE ADVANTAGES OF

HAVING **TIME** RECORDED

ACCURATELY
AUTOMATICALLY
EFFICIENTLY

THE NEW *Simplex* TIME RECORDER

This new Simplex Time Recorder figures payrolls easier, 50% faster—cuts payroll costs in half.

Vertical or horizontal print . . . Two color registration . . . Trigger-touch print . . . Direct subtraction . . . One-minute positioning . . . Attractive, indestructible case.

SIMPLEX TIME RECORDER CO., Gardner, Mass., Dept. I-104
Please give us more information on:

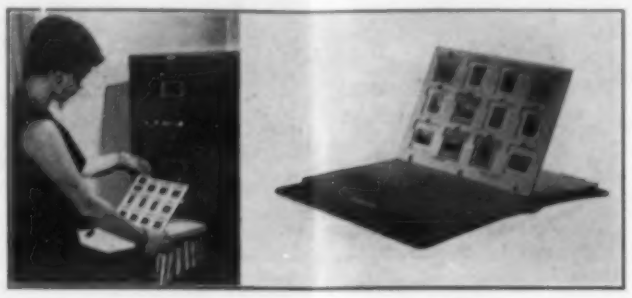
☐ Cost Recorder ☐ Time Cards ☐ Electric Time Stamp
☐ Watchman's Clock ☐ Time Card Files ☐ Time Card Racks

Firm .....
Name .....
Street & No. .....
City ..... State .....

If you write maker identify as IEN - 4582

STORING . . Mounting cards fit in notebook and hold film slides

Source: BURKE & JAMES INC.
321 S. Wabash Ave., Dept. IEN, Chicago 4, Ill.



For safe storage and quick selection

Twelve pockets are included in new rectangular cards to hold film slides in orderly arrangement and to permit placing and removing them quickly. The slides can be indexed on the cards and the cards can be assembled in a standard ring-binder notebook to fit in a file cabinet. Indoor light reflects through the slides when they are in place in the cards so they can be identified quickly. List price per card is 35 cents. A package of three is available for $1.

If you write maker identify as IEN - 4583

GRINDING . . Portable pneumatic tool drives mounted points, to 100,000 rpm.

Source: NU-JETT PRODUCTS CO.
1335 Michigan, Dept. IEN, Grand Rapids 5, Mich.

$42.50 complete

The housing of this new Model-100 pneumatic tool measures ⅞ in. in diameter by 4¼ in. in overall length, including the safety guard cap that fits over the chuck carried in the tool nose. The assembly weighs 5 ounces. The chuck takes ⅛-in. shanks of mounted points and a ⅛-in. air supply hose. Operation is on 50 lb. or more from a shop air line.

Application can be made on metal, wood, plastics, glass. Each tool is provided with an air line filter to remove dirt and moisture and with a lubricator to control the flow of oil. A wrench and a length of hose are included.

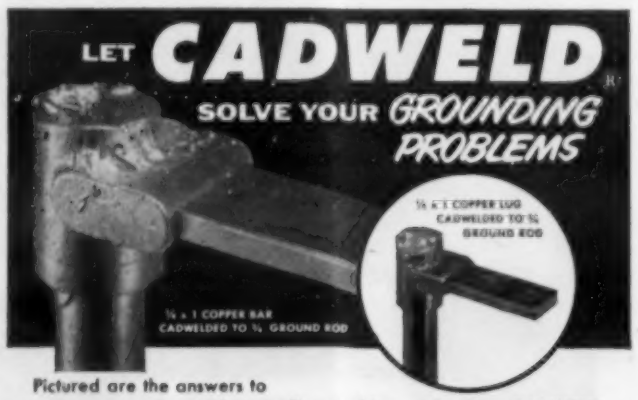
If you write maker identify as IEN - 4584

Eastman Tenite plastic, extruded by Busada Mfg. Corp., 58-95 54th St., Dept. IEN, Maspeth 78, N. Y., into 20-ft. lengths of 3-in. pipe, is employed to carry a 15 per cent sulfuric acid solution at 120 deg. and 165-ft. head. The pipe line is 3 in. in diameter, 2,400 ft. in length and is buried underground to a depth of 4 ft. to reach a prepared waste bed. The pipe lengths are joined together by slip sleeve couplings and solvent cement. The line has operated continuously for several months with no signs of corrosive wear.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4585

LET **CADWELD** SOLVE YOUR *GROUNDING PROBLEMS*



Pictured are the answers to two common electrical grounding problems solved by CADWELD.

The main illustration shows a permanent CADWELD grounding installation using copper bar in place of cable. The insert shows how the same CADWELD connection was employed where a disconnect type grounding system was required. The disconnect system is specified where periodic resistance checks are taken of individual ground rods.

WITH CADWELD

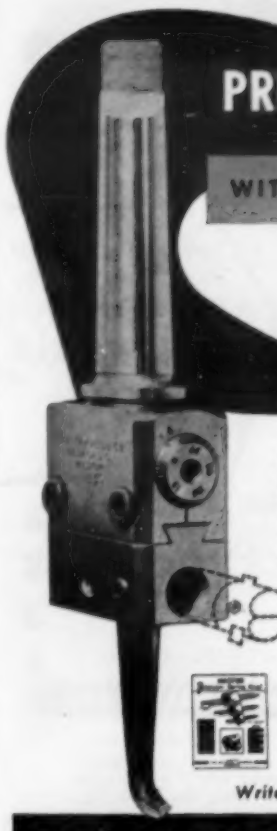
1. Copper bar or cable can be permanently welded to copperweld or steel ground rods.
2. Copper bar can be joined flat (as illustrated) or on edge.
3. Length and drilling of disconnect lug can be varied and scrap copper bar can be used.

for the best in *ELECTRICAL CONNECTIONS*

The Current Trend is **CADWELD**
ERICO PRODUCTS, INC.

If you write maker identify as IEN - 4586

PRECISION BORING WITH MAXWELL MASTUR TOOLS



• Adjustable to 0.0002-inch, the new improved MASTUR boring tools feature precision, speed and long service life. New body and block construction permits these tools to take heavier cuts at higher speeds — to do more work in less time.

Adjusting-screw head is graduated into 50 divisions to provide readings in thousandths, and body is graduated to permit vernier readings of 0.0002-inch. The three models available have maximum boring bar capacities of 1/2, 3/4 and 1-inch and boring range from 3/8 to 15 inches.

Write for catalog. 987-MC

THE MAXWELL COMPANY
391 BROADWAY • BEDFORD, OHIO

If you write maker identify as IEN - 4587

"TEFLON" SEALING

Exclusively at Graef Engineering Company

Seal maintains all the desirable properties of "TEFLON"
Extreme chemical resistance
High temperature stability
Superior electrical properties
Non-adhesion
Allows fabrication from "TEFLON" film

POTENTIAL APPLICATIONS

"TEFLON" bonded to "TEFLON"	"TEFLON" bonded to Metal
Bags and Sacks	Valve Discs
Tank Liners	Vat Liners
Containers	Capacitors
Protective Clothing	Protective Coatings
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GRAEF ENGINEERING COMPANY
P. O. Box 416
Paramount, California

If you write maker identify as IEN - 4588

MAKE YOUR OWN
ADJUSTABLE SCAFFOLDS and MATERIAL RACKS

WITH
AMIDON FITTINGS

AND STANDARD PIPE

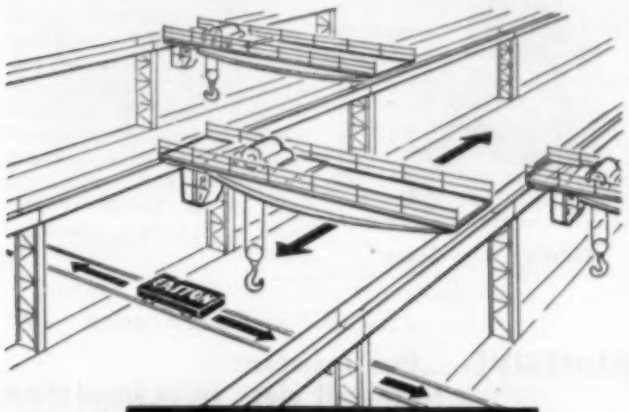
PICTURES AVAILABLE

AMIDON ENGINEERING CO.
ELYRIA 14, OHIO

If you write maker identify as IEN - 4589

Cross-Bay Transfer

Automatic motor driven transfer cars provide a universal handling system in modern parallel bay plants now served by overhead cranes. Also for transfer between plant buildings.



® EASTON

A-1040

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

If you write maker identify as IEN - 4590

SIGNODE RETAINING STRIPS

with visible pre-punched nail holes!

Here is an improvement our many customers asked us to make in widely used *Signode Retaining Strips.* Now nail holes are instantly visible even in dimly lit cars. As a result, *Signode Retaining Strips* become more time-saving, more practical and more desirable than ever!

Provide best doorway protection

Many loss and damage claims originate in damage to ladings at doorways. Bags snag. Other containers jam badly and car doors can't be opened without damaging the lading. *Signode Retaining Strips* effectively prevent such damage.

Signode Retaining Strips are made of steel strapping held between laminations of waterproof kraft paper 18" wide. The *Duplex* type can be cut in the middle and draped back to permit through-car loading. Strip ends are retensioned after car is loaded. Write for details, and application demonstration.

Write SIGNODE STEEL STRAPPING COMPANY
2611 N. Western Ave., Chicago 47, Ill.

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 4592

FURNITURE . . Folding steel chair, with upholstered seat and back rest

Source: AMERICAN SEATING CO.
901 Broadway, N.W., Dept. IEN, Grand Rapids 2, Mich.

Comfortable

Steel tube with reinforcing crossbars and rubber feet comprise the frame of this new No. 60 folding chair. The feet are equipped with rubber shoes. The metal parts are bonderized and then are dipped and sprayed with enamel. The spring arch seat is available with washable DuPont Starfrost, an imitation fabric material, or forest green fabric upholstery. The metal parts are finished in black or gray enamel. A companion unit, No. 61, omits the padded back panel.

If you write maker identify as IEN - 4593

CORROSION PROOFING . . Viscous fluid to brush or spray on iron or steel

Source: OAKITE PRODUCTS INC.
116-A Rector St., Dept. IEN, New York 6, N. Y.

Technical data upon request

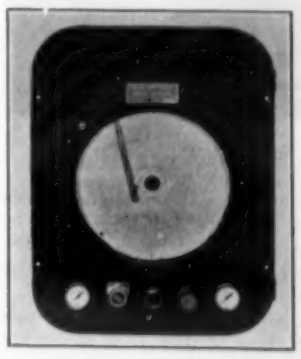
Steel Preserver is a new dark brown heavy-bodied fluid with flow point at 140 deg. F. and viscosity of 116 to 119 at 70 deg. F. The material is applied to clean iron or steel surfaces, by brushing or spraying if the work is large, or by tank immersion on small parts. The protective film remains tacky for an indefinite period indoors. It dries to touch under outdoor storage conditions. It can be removed by immersing the parts in a solution of Oakite alkaline or solvent detergent, followed by a cold water rinse.

The material has protected pipe from corrosion by salt air in an oil company's yard for somewhat more than a year. It prevented corrosion on steel coils after six weeks outdoors.

If you write maker identify as IEN - 4594

CONTROL . . Viscosity recorder actuates pneumatic process controller

Source: NORCROSS CORPORATION
247 Newtonville Ave., Dept. IEN, Newton 58, Mass.



Governs pressure

Model R2P is a new viscosity recording instrument equipped for actuation of a standard 3 to 15-lb. pneumatic process controller. The new instrument provides two output air pressures, one a function of the measured viscosity and the other of the control set point. It is available for use with any of the measuring elements developed by the company for process viscosity control.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4595

SAUEREISEN NO. 54

A NEW POUR LAY CONCRETE WHICH RESISTS Corrosive Acids, Acid Gases, Salts and Solvents!

Highly recommended for use in floors, sewers, tanks, chimneys, sumps, linings, drains, pits, vats, foundations, towers, digesters! Stronger than ordinary concrete. Quick setting—ready to use in 24-48 hours. Easy to use, it may be poured into place and leveled off. Resistant to water, steam!

SPECIAL TRIAL ORDER
125 lb. Lot **$15.00**

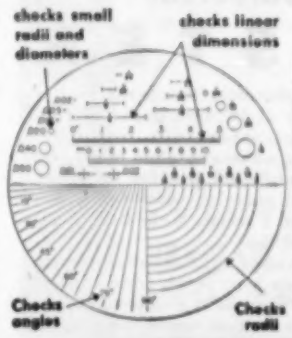
The construction of acid-proof pit and piers like this are a natural for Sauereisen No. 54!

Free catalog with each order!
SEND ORDER TO DEPT. IEN

SAUEREISEN CEMENTS COMPANY
PITTSBURGH 15, PENNSYLVANIA

If you write maker identify as IEN - 4596

THE Original BELL & HOWELL
Pocket Comparator



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

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If you write maker identify as IEN - 4597

the M·S·A SMOKESCOPE

★ Accurate, simple instrument for estimating density of smoke in stack effluent

Precision built, and optically accurate, this instrument minimizes error resulting from background variations, ambient light, and eye focus changing while looking from smoke to reference charts now used for estimations.

In the Smokescope, the reference film disc receives light from same source as does the smoke. Background differences are minimized because they effect smoke and disc equally. Lens projection means observer makes comparison without changing eye focus. Ambient light is not a factor. Write for details.

★ Sturdy leather carrying case protects Smokescope, aids handling

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
201 North Braddock Avenue
Pittsburgh 8, Pa.
83 Branch Offices in the United States and Canada

If you write maker identify as IEN - 4598

"Trailer-Loading Time Cut in Half... WITH OUR MAGCOA PORTABLE YARD RAMP"

—Reports Frank Gray, Traffic Manager, Universal-Cyclops Steel Corp., Bridgeville, Pa.

"We now load 400,000 lbs. of steel products in an 8-hour shift; have released two men for other duties—direct benefits of our MAGCOA Yard Ramp," says Mr. Gray.

Here's what you'll find when you look into the revolutionary new MAGCOA Portable Magnesium Yard Ramp that permits truck-loading and car-loading from ground level—

- One man moves it. Hydraulic lift helps position it.
- You get fuller use of present facilities, lift trucks and operators.
- Exclusive MAGCOA quarter-round safety curbs and rounded end-castings protect workers, lift trucks and loads.
- Capacities to 16,000 lbs. in five standard sizes.
- Bridge-type construction of rugged magnesium—by magnesium fabricating specialists.
- Low cost—less than conventional stationary docks in most of U. S.
- Prompt delivery from mass-production factory.
- Enthusiastic users from Coast to Coast.

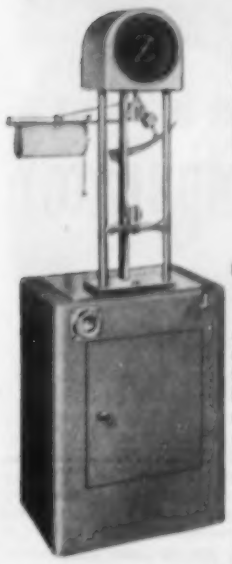
Look into all the facts! Send for MAGCOA Yard Ramp literature. At the same time, look into how MAGCOA lightweight, heavy-duty Magnesium Dockboards can speed your dock-level loading. *Write today.*

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 4599

small COMPACT TESTER

large ACCURATE RANGE



DILLON

multi-low-range universal

TESTER

A portable laboratory instrument that is accurate to ½ of 1%. Tests paper, thread, fabrics, plastics, springs, film, cord, wire, leather, resins, adhesives, glass, wood, ceramics, felt, cardboard, bakelite, insulation and any other materials which fall within its range. Has 5 scales: 0-10, 0-25, 0-50, 0-100 or 0-300 lbs.

Stress-strain curve automatically recorded on graph sheets. Limit switch prevents overrun. Indicates load as it is applied. Accessories permit transverse, tensile, compression and shear testing easily and economically. Speeds from 0" to 20" per minute. The ultimate in fine testing equipment yet low in cost.

Write or wire for illustrated bulletin—Today

W. C. DILLON & CO., INC.

14620K KESWICK ST., VAN NUYS, CALIF. (Suburb of Los Angeles)

If you write maker identify as IEN - 4600

EVEN THE BEST CAN BE IMPROVED

Gerotor offers its New QDB series of small capacity pumps as proof!

Gerotor has redesigned its series of small capacity pumps to give even more . . .

- **FLEXIBILITY**—the QDB can be operated in either clockwise or counter-clockwise direction by simply changing the position of one internal plug!
- **RANGE OF APPLICATION**—the QDB can be obtained with an extended shaft to operate another pump in tandem, off of one motor!
- **DEPENDABLE SERVICE**—the QDB is built to give more dependable service over a longer service span than any comparable pump. Its longer life reduces your maintenance and replacement costs.

If you have need for pumps in the QDB range, call on Gerotor.

Gerotor makes a complete line of hydraulic pumps in ranges from .4 g.p.m. to 40 g.p.m. The Gerotor engineers can help you solve your hydraulic pump problems. Write for *free literature* and full particulars.

Check this Capacity Table

Type	Delivery g.p.m.—1800 r.p.m. Discharge Pressure p.s.i. 0	250	500	750	1000
QDB .4	.42	.40	.38	.35	.31
QDB .75	.84	.80	.78	.73	.66
QDB 1.5	1.67	1.62	1.57	1.50	1.42

GEROTOR MAY CORP. - Box 86 - Baltimore 3, Md.

GEROTOR
HYDRAULIC PUMPS & MOTORS

If you write maker identify as IEN - 4601

Here's the "handiest tool" to help you select the right material for steel castings . . .

your Lebanon Slide Chart

THIS new Lebanon Slide Chart gives you the reference facts you need on 19 carbon and low alloys and 17 stainless and corrosion-resistant alloys in regular use at Lebanon. Simply by adjusting the guide arrow at each grade reveals . . .

- *Nominal Analyses*
- *Minimum Mechanical Properties*
- *Standard Designations i.e. ACI, AISI, ASTM, Hydraulic Institute, SAE, Military and Federal.*

Just fill in the coupon below and your valuable Lebanon Slide Chart will be on its way to you.

Lebanon CARBON, SPECIAL ALLOY AND STAINLESS STEEL **Castings**

Lebanon Steel Foundry
Dept. M, Lebanon, Pa.

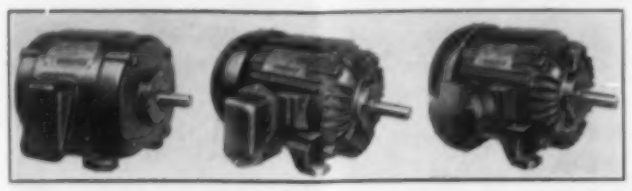
Please send me the new Lebanon Slide Chart

Name _____
Company Name _____
Address _____

If you write maker identify as IEN - 4602

MOTOR . . Squirrel cage induction in new NEMA frame sizes 182 and 184

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.



Technical data upon request

The company announces production of its Series-G open, totally enclosed fan cooled, and totally enclosed fan cooled explosion proof motors, in two new NEMA frame sizes 182 and 184. The line will eventually include frame sizes to 326. As a comparison of sizes, a 5-hp. 1,800-rpm. general purpose drip proof motor, in the old design, is built in a 254 frame. The same motor in the new design will be in a 215 frame.

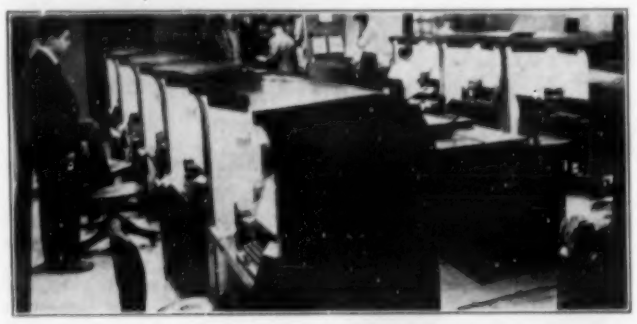
The new motors are similar in appearance to present designs. They have cast iron frames and end shields with rotors made of pressure cast aluminum. Bearings are grease lubricated, medium series, double shielded ball design assembled for re-lubrication without dismantling the motor. Stator windings are random wound type of Formvar-coated wire in semi-closed slots.

Stators are dipped and baked for protection against moderate amounts of moisture, weak acids and alkalis. Intake openings, in the end shields of the open type motor, are located in the bottom half of the shield, sufficiently high above the base to minimize the probability of incoming air sweeping dust or lint from the floor into the motor. All continuously rated totally enclosed designs are fan cooled. The company has prepared literature on the three types under designations 51 B 6210-E, 7225 B and 7286D.

If you write maker identify as IEN - 4603

INSULATING . . Acoustical cabinet to isolate noisy office machines

Source: GATES ASSOCIATES
54 Gorsline Bldg., Dept. IEN, Rochester 14, N. Y.



Seventy models in the line

Sof-Tone trade names a new acoustical cabinet that encloses the back and sides and extends over the top of a desk or table supporting a noisy office machine. It includes one or two fluorescent lighting fixtures that uniformly illuminate the interior. The operator sits in the open in front.

The cabinet employs a soft absorbent material that stops harsh metallic machine noises at their source. It is available in various widths, depths and heights to apply around specified office equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4604

NEW STRAPPING TAPE

Brainard now offers complete service—steel strapping and strapping tape

● The Brainard Strapping System, comprising a complete line of steel strapping, tools, and accessories, has now been expanded to include strapping tapes, both pressure-sensitive and gummed, and dispensers for all applications. The tapes are filament-reinforced to provide high tensile strength, and are designed for strapping applications. Brainard is the first company to offer both strapping methods. Brainard can give you unbiased recommendations on the best method for your applications. Most shipping departments and packaging lines can use both steel strapping and strapping tape to advantage.

Brainard
STEEL DIVISION
SHARON STEEL CORPORATION

For booklet write
BRAINARD STEEL DIVISION
Dept. II-4, Griswold Street
Warren, Ohio

If you write maker identify as IEN - 4605

PRINTING . . Photocopy cabinet stores equipment and shields operation

Source: AMERICAN PHOTOCOPY EQUIPMENT CO.
1920 W. Peterson Ave., Dept. IEN, Chicago 26, Ill.

Bulletin, "Lite-Guard"

The doors, at the front of this new Lite-Guard cabinet, and the top open to form a light shield with a vinyl plastic draw curtain so the company's Auto-Stat photocopy equipment can be operated conveniently and without danger of over-exposure of the sensitized photo paper. The cabinet measures 36 by 18 in. in depth in closed position. It opens to a depth of 36 inches. Overall height is 78 inches. List price is $69.50.

If you write maker identify as IEN - 4606

ADHESIVE . . Fire resistant to install glass fiber insulation

Source: PAISLEY PRODUCTS INC.
630 W. 51st St., Dept. IEN, New York 19, N. Y.

Technical data upon request

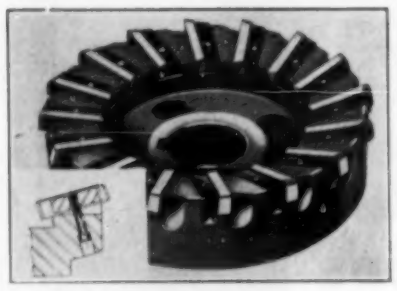
Insulation pads and blankets, made of glass fiber, can be applied on the interior walls of gas ranges, oil heaters, dryers, air conditioning ducts, furnace pipes, power piping, by this new Insulam synthetic rubber-like resin emulsion adhesive. It is characterized by quick wet-tack and suction to hold assemblies together until the adhesive is dry. It then becomes a water-resistant film that will not support combustion and will withstand exposure to 375 deg. F. without delamination.

Application can be made on sheet metal, aluminum foil, fabrics, wall board. The adhesive weighs 9.6 lb. per gal. and is light tan in color. It dries to a tough translucent film that remains permanently flexible. Packaging is in gallon cans to 55-gallon containers.

If you write maker identify as IEN - 4607

MILLING . . Carbide cutter for brass, cast iron, malleable iron

Source: SUPER TOOL CO.
21650 Hoover Road, Dept. IEN, Detroit 13, Mich.



For production milling

Solid carbide blades are held by screw anchored wedges in the body of this new face milling cutter. Construction is similar to that of the company's Type 1BH face mill. The blades are arranged radially. They can be reversed in either right or left hand bodies. Five standard sizes in the new line measure 6 to 14 inches in diameter.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4608

Only PLY-GARB *offers*

P.C.E.

Protection-Comfort-Economy

Ply-Garb offers amazing protection against corrosive liquids—is designed for comfort, appearance, and complete body freedom for action. Ply-Garb outwears ordinary fabrics 10 to 1—eliminates frequent and costly replacements.

Available in DYNEL • ORLON • VINYON • VINYL COATED • CLEAR PLASTIC • ALUMINIZED ASBESTOS.

Specify Plyglovs for 10 Times the Wear

Plyglovs will outwear 10 ordinary pairs of work gloves. Plastic coated to protect from acids, caustics, oils and water.

Write for Details and Literature

The Standard of Perfection in Protection

THE MILBURN COMPANY
DETROIT 7, MICHIGAN

If you write maker identify as **IEN - 4609**

PROTECTING . . Respirator excludes toxic dusts, organic vapors

Source: MINE SAFETY APPLIANCES CO.
201 N. Braddock Ave., Dept. IEN, Pittsburgh 8, Pa.

Bulletin 1007-4

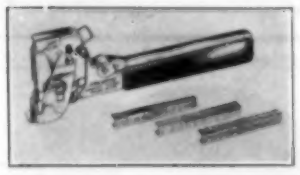
Static-web dust filters clamp on the twin chemical cartridge filters of this new Comfo respirator. The charged resin-treated felt in the dust filter retains dust and supplements the mechanical filtering action. Cartridges and filters are independently replaceable.

Assembly includes an elastic head band, a bridge strap for comfortable face piece adjustment across the nose, a guarded non-clogging exhalation valve, a floating cushion face piece with soft rolled edges for a gas-tight seal without binding or pressure points.

If you write maker identify as **IEN - 4610**

STAPLING . . Magazine hammer drives staples with 3/8 to 9/16-in. leg.

Source: FASTENER CORPORATION
860 Fletcher St., Dept. IEN, Chicago 14, Ill.



Prevents tearing

Model HT-100 is a new hammer type stapling tool in the company's Duo-Fast line. It takes staples measuring 3/8, 1/2 or 9/16 in. in leg length by about twice the width of a standard staple. It is designed for use on materials that might be punctured by the standard staple. A shield on the trip lever also protects the work against damage when a blow is struck.

If you write maker identify as **IEN - 4611**

LUBRICATING . . Pressure sprayer delivers dry colloidal graphite

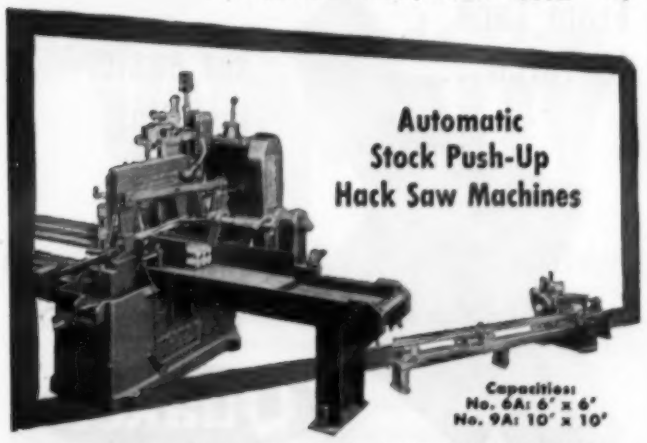
Source: AP PARTS CORPORATION
1803 Spiesbusch Ave., Dept. IEN, Toledo 1, Ohio

Sprayer 5210

Pres-A-Luber, a gas pressurized container for colloidal graphite, has been supplemented with this new DGF-123 gas-pressurized production sprayer to apply dry pre-lubricant on moving parts of internal combustion engines prior to assembly. The graphite forms a dry protective lubricant coating on the bearing surfaces before regular lubricating oil is pumped in while an engine or machine is in operation. The equipment includes the pressurized container with delivery hose and a valve equipped nozzle.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4612**



Feed, Measure, Cut-Off—AUTOMATICALLY

These automatic stock push-up hack saw machines are not new. MARVEL built the first practical bar feed hack saw machines, over 30 years ago. The sound, proven, basic principle of these machines has never changed—but they have been constantly improved and refined. Today they are still the leaders—the most practical, fastest, most accurate, most productive cutting hack saw machines built. No matter what your cut-off work, let us recommend the MARVEL saw that will give you true economy, speed and accuracy at an attractive price.

Write for Catalog

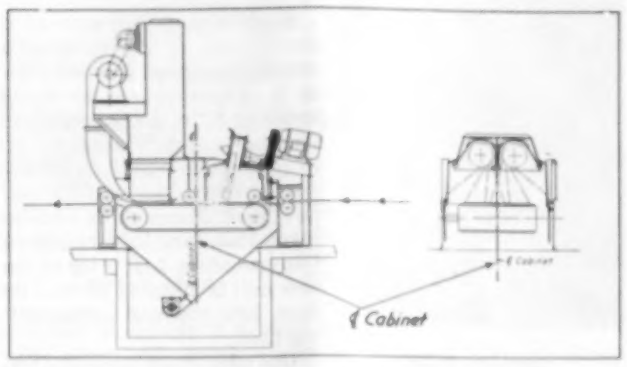
MARVEL *Metal Cutting* **SAWS**
Better Machines-Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

If you write maker identify as **IEN - 4613**

CLEANING . . Abrasive blast machine for steel sheets to 54 in. in width

Source: PANGBORN CORPORATION
230 Pangborn Blvd., Dept. IEN, Hagerstown, Md.



The work rides through

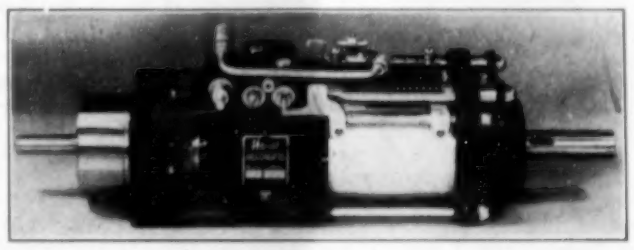
Two Rotoblast centrifugal heads, set at 90 deg. with the movement of the work conveyor in this new Model ES-503 cleaning machine, drive abrasive at high velocity across the surface of a steel sheet, or plate, moving with the conveyor at 20 to 80 feet per minute. The two heads deliver 160,000 lb. of abrasive per hour. The equipment measures 15 ft. in length, 18 ft. in width and stands about 22 ft. in height. It will remove mill scale, corrosion and dirt from a hot rolled sheet at the rate of 200 sq. ft. per minute.

The abrasive travels through a closed circuit that includes a fan to blow the deposited material from the work surface. A spiral conveyor moves it to an elevator that carries it up through a separator and reclaimer for delivery back to the two heads. Standard equipment on the unit illustrated includes two No. 195-5 RG-2 heads, each with a 50-hp. motor.

If you write maker identify as **IEN - 4614**

DRILLING . . Air hydraulic head 4-in. stroke, rates 3/4 in. in steel

Source: HAUSE ENGINEERING
Dept. IEN, Montpelier, Ohio



Model 04 weighs 44 pounds

A drive shaft extends to the left in this new Model-04 air hydraulic drill head. The shaft takes a pulley or sheave in place of the pneumatic motor in the design previously described IEN-10540-53. Feed is by air pressure from a shop line with feed rate control and retraction by controlling the flow of hydraulic fluid in the cylinder.

The head can be set up with positive stop for dwell or instantaneous retraction, for continuous cycling, skip drilling, back feeding and manual jogging. The head weighs 44 lb. and rates 3/4 in. in mild steel. The drive shaft is 3/4 in. in diameter by 2 1/2 in. in length to take a standard fixed or variable pitch V-belt sheave. Stroke is adjustable to 4 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4615**

ATLAS

TRADE MARK REG.

REGULATING DEVICES

Tell us about your tough regulating problems. ATLAS has been in the regulating business *exclusively* for more than a half century. Where problems are special ATLAS engineers are always eager to help. Our designers and engineers have come up with the right answer many times in the past, often where others have failed. We have produced special regulators for refineries, utilities, equipment manufacturers, pipe lines, processing industries, marine installations, govt. agencies, etc.

At the left we show a typical ATLAS Temperature Regulator — applicable to many services. For complete information check the square "Temperature Regulators" below. Check other items also, on which you want data. Clip out, and mail to us with your name, firm name, and address.

ATLAS VALVE COMPANY
REGULATING VALVES FOR EVERY SERVICE

263 South St. Newark 5, N. J.

Represented in Principal Cities

- ☐ Back Pressure Valves
- ☐ Balanced Valves
- ☐ Boiler Feed Regulators
- ☐ Control Valves
- ☐ Damper Regulators
- ☐ Exhaust Control System
- ☐ Float Valves
- ☐ Oil Control Cocks
- ☐ Temperature Regulators
- ☐ Pressure Regulators
- ☐ Pump Governors
- ☐ Reducing Valves

If you write maker identify as **IEN - 4616**

Cyclone Belts Carry Tiles Through Automatic Spraying, Drying Operations

● Cyclone Flat Wire Conveyor Belts —galvanized or stainless steel—are used to carry tiles through continuous spraying and drying operations. The wide-open areas of the belt permit sufficient air circulation and fast drainage for thorough, uniform drying. Belts average 60 to 100 feet in length, in various widths, for easy removal of tiles from belt by packing girls.

Cyclone manufactures several styles of Conveyor Belts in a variety of metals, alloys and finishes. Our experienced engineers will be glad to give you free advice on the type best suited to your operations. Get in touch with the nearest Sales Office and write Dept. C-44 for a free copy of Catalog #5.

U·S·S CYCLONE
METAL CONVEYOR BELTS

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION, WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

UNITED STATES STEEL

If you write maker identify as **IEN - 4617**

LITTLE DIAL...

Tells big story about Temperature, Pressure or Load!

The dial is only 6" in diameter, but bold numerals and graduations make it easy to read at a glance.

For Temperature, mercury, gas, organic liquid (Monolex) or vapor actuated systems to fit nearly every type of application. Ranges from minus 125°F. to +1200°F.

For Pressure, range spans from 12 psi to 20,000 psi are available using Bourdon springs or C springs of appropriate metals for required service.

For Load, standard tension and compression load elements are incorporated to use a new mercury Bourdon spring.

New Movement Design minimizes linkage error, means more dependable accuracy throughout the range span.

Fume and moisture proof case may be face or flush mounted, panel or field.

Electric alarm mechanisms, easily and quickly adjusted—optional.

Ask your Taylor Field Engineer, or write for **Bulletin 98214.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as **IEN - 4618**

Need VOLUME on SMALL PARTS like these?

Investigate MULTI-SWAGE

● If it's VOLUME you need on small tubular metal parts similar to these, be sure to look into Bead Chain's MULTI-SWAGE Process. Many prominent users of solid pins for electronic and mechanical purposes have cut costs by switching to Multi-Swaged *tubular* pins . . . without sacrificing strength or accuracy. Multi-Swage Parts serve in a wide variety of electronic and mechanical products. Send part (up to 1/4" dia. and to 1 1/2" length) and your specs for a quotation. Or write for DATA BULLETIN.

The BEAD CHAIN Mfg. Co.
TRADE MARK
59 Mountain Grove St., Bridgeport 5, Conn.
Manufacturers of BEAD CHAIN — the kinkless chain of a thousand uses, for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products.

If you write maker identify as IEN - 4619

MACHINE LOADING, SCHEDULING DISPATCHING AND JOB ASSIGNMENT

Bulletin outlining procedure widely used for these cost-cutting results now available:

Visual Scheduling . . . a glance at Board shows work ahead for each machine or man.

Order Sequence . . . quickly indicated by arrangement of tickets representing orders.

Schedule Changes . . . easily specified by rearranging tickets in revised sequence.

No Delay Between Planning and Dispatching . . . no lists or records to write.

Operation According to Plan Assured.

Readily Adaptable . . . to production, assembly, maintenance, engineering and work of every variety, using work orders, time tickets, move tickets, tabulating cards, etc., and McCaskey Machine Control Boards.

Write today for your copy of illustrated Bulletin A-630 IEN

McCaskey INDUSTRIAL CONTROLS

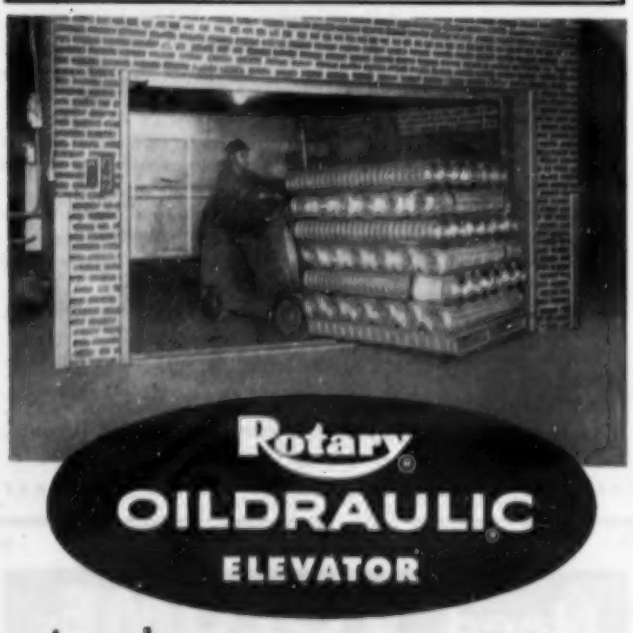
PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE

THE McCASKEY REGISTER DIV.,
Victor Adding Machine Co.
ALLIANCE, OHIO
Galt, Canada Watford, England

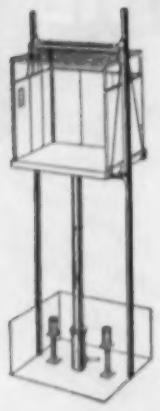
If you write maker identify as IEN - 4620

Most Economical ELEVATOR

for new installations or replacements



Rotary® OILDRAULIC® ELEVATOR



Save money on installation and operating costs

- Modern hydraulic operation
- No costly, unsightly penthouse
- Smooth starts and stops
- ¼" accuracy on landings
- Rugged car construction
- Engineered for power trucks
- High Efficiency power units
- Low upkeep expense
- New Oildraulic Controller
- Freight or passenger service
- Capacities up to 100,000 lbs.

Over 75,000 Oildraulic elevators and lifts are now in use . . . backed by Rotary's coast-to-coast organization.

MAIL NOW FOR NEW CATALOG

ROTARY LIFT CO.,
1114 Kentucky, Memphis 2, Tenn.
Send catalog on Rotary Oildraulic Elevators to:

Name_____

Address_____

If you write maker identify as IEN - 4622

GAGE . . Flexible steel rule carries foot and inch scales to 10 feet

Source: EVANS & COMPANY
410 Trumbull St., Dept. IEN, Elizabeth 1, N. J.

Supports itself

King-Size designates this new design in the company's White-Tape flexible steel rule. It is characterized by blade width at ¾ in. that permits extending the blade straight up to practically its 10-ft. length without bending of buckling. Overhead dimensions can be taken that formerly required two operators. List price of the new unit is about $2.40 with its case, belt clip and compensating hook.

One edge of the rule is marked off in 16ths of an inch from 1 to 120 inches. The first 6-in. carry 32nds. The other edge is marked in feet, inches and 8ths, with black-on-white smaller size foot markings repeated at each inch mark. The end hook recesses to permit the tape end to butt against an obstruction for an inside measurement and to pull out and hook over the edge of an object for outside measurement. Each tape is packaged in a clear Tenite box.

If you write maker identify as IEN - 4623

BURRING . . Double-spindle machine cleans both sides of drilled work

Source: MODEL MACHINE CO.
4729 Hawthorne St., Dept. IEN, Philadelphia 24, Pa.

Model A

Opposed spindles operate in opposite directions in horizontal position on this new machine. They are equipped with chucks and will take countersink type burring tools for holes to 1 in. in diameter. Work capacity between the chucks is 6 inches. Dimension from the chuck center line to the plate at the back of the work area is 3 inches. The machine measures 24 by 20 by 33 inches.

The operator inserts a work piece, depresses a foot control valve pedal and one spindle approaches the other to clean the edges of the hole on both sides. Inlet air pressure is 5 to 40 pounds. Spindle drive is by a ½-hp. 110-volt single-phase motor with a variable speed transmission. Work can be handled at the rate of 600 to 3,000 holes per hour.

If you write maker identify as IEN - 4624

Mars Engineering, Inc., 375 South St., Dept. IEN, Newark 5, N. J., has added an engineering division to design industrial dust collecting and fume eliminating equipment to fit specified requirements. The designs are handled by fabricators and installers of sheet metal hoods and duct work so these organizations are not required to provide design service for the final user of the equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4625

FIFTY-TWO YEARS OF EXPERIENCE ENGINEERING AND MANUFACTURING VENTILATORS IS AVAILABLE TO YOU . . . ON REQUEST

AIR IS OUR BUSINESS

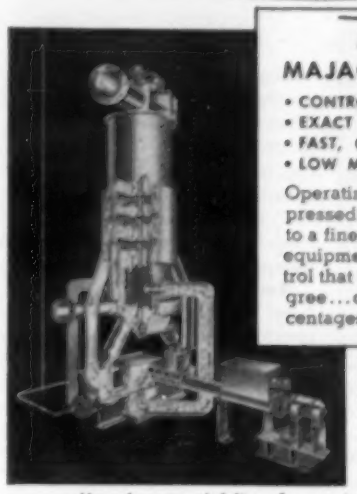
If you have a ventilating problem, Burt Engineers and case histories from thousands of time-tested Burt installations stand ready to help you. Burt holds no brief for any specific type of roof ventilator. The Burt line is complete—with a type and size for any need. If modified or special designs are required, Burt can design and fabricate them—economically. If your problem is specific, give us the details. We'll recommend the solution. If it is general, write for the latest Burt catalog with data and descriptions of Burt's complete line.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company
909 So. High St., Akron 11, Ohio
MEMBER POWER FAN MANUFACTURERS ASSOCIATION

If you write maker identify as IEN - 4626

IS PULVERIZING on your program?



Find Out About
MAJAC JET PULVERIZERS

- CONTROLLED FINENESS
- EXACT PARTICLE DISTRIBUTION
- FAST, CONTINUOUS PRODUCTION
- LOW MAINTENANCE COSTS

Operating by steam, gas or compressed air, the Majac Jet will grind to a fineness impossible with other equipment. In addition you can control that fineness to any desired degree . . . or provide for various percentages of different micron sizes.

Pilot plant test grinding, and custom grinding on contract basis, also available.

Write for New Bulletin Containing Complete Engineering Data.

Here is a partial list of materials which the Majac Jet has pulverized successfully:

Alumina · Aluminum Sulphate · Carbon · Ceramic Frit · DDT · Feldspar · Fungicide · Graphite · Gypsum · Iron Ore · Limestone · Mica · Paint Pigments · Plastics · Pumice · Quartz Sand · Silica Gel · Talc

MAJAC INCORPORATED
23rd ST. and P.R.R. (Pittsburgh District) SHARPSBURG, PA.

If you write maker identify as IEN - 4627

FIRST high temperature hose assembly using TEFLON*

. . . handles even the most corrosive fluids to +450° F!

Fluoroflex†-T hose assemblies mark a tremendous advance in flexible line serviceability. Look at these features:

- Fluoroflex-T (Teflon compound) tube . . . chemical-proof, non-swelling . . . absorbs vibration
- Flexibility that doesn't change from −100° to +450°
- Stainless steel braid—for 1000 psi working pressures and for high external corrosion resistance
- Compact fittings swaged to armor and tube—won't blow off
- Light weight! Space saving! Non aging!

Write for Bulletin FH-1.

**DuPont trademark for its tetrafluoroethylene resin.*
†Resistoflex trademark for products from fluorocarbon resins.

RESISTOFLEX *corporation*
Belleville 9, New Jersey

If you write maker identify as IEN - 4628

From Tank to Torch . . .

for easier handling

2 Hoses Bonded Together

Quaker

TU-LINE WELDING HOSE

Put real safety and savings between tank and torch with this Quaker-engineered dual line hose. No kinking, tangling or fouling. Two individual lines are fabricated into one hose unit by the most modern lead-mould process. Thick, tough, abrasion-resistant covers are red and green for quick hook-up identification. Furnished in coupled or uncoupled lengths. For the most in economy, insist on TU-LINE hose . . . another Quaker quality product for modern production efficiency.

Write for free folder and name of nearest distributor.

QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
PHILADELPHIA 24, PA. BRANCHES IN PRINCIPAL CITIES

If you write maker identify as **IEN - 4629**

CAN'T BEAT IT!

NEW - DIFFERENT LOADBINDER

LOOK! One handle assembly does the work of two conventional loadbinders. Each Laughlin loadbinder takes 4 sizes of clevis grab hooks. Use correct size hook to fit chain without nicking or slipping. Cut your inventory, insure long wear and safety. Unique design keeps jaws from spreading. Available in 2 sizes for ¼" to ⅝" chain. Drop forged and heat treated.

Available now from your industrial distributor. Write for 4-page folder with full details and user's comments.

LAUGHLIN

THE THOMAS LAUGHLIN CO.
41 Fore Street Portland, Maine

If you write maker identify as **IEN - 4630**

Ham on Rye or Rye on Hand?

Count BOTH

(and 1,001 Other Items)

with this New Veeder-Root

VARY-TALLY

Multiple-Unit Reset Counter

Knowing how many apple versus lemon pies, for instance, are ordered on a given day . . . or how many cases of what are in the cellar . . . helps a restaurant *count*rol, make plans, make profits. The same goes for a manufacturer or wholesaler seeking tighter inventory Control . . . or for anyone with a problem in *count*rol.

Arranged compactly on stands in tiers, the Vary-Tally can be supplied in any of 66 combinations, up to 6 banks high and 12 units wide, with a minimum of 2 units wide. Write for news sheet and prices.

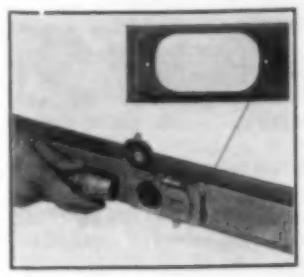
VEEDER - ROOT INCORPORATED
HARTFORD 2, CONNECTICUT
Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

"The Name that Counts"

If you write maker identify as **IEN - 4632**

CONNECTOR . . Receptacle cover for application on Surfaceduct raceway

Source: NATIONAL ELECTRIC PRODUCTS CORP.
140 Stanwix St., Dept. IEN, Pittsburgh 22, Pa.



Snaps in place

Number 1710-RS designates a new raised adapter cover to accept an Ever-Lok receptacle without the installation of separate boxes. It snaps in place on the company's Surfaceduct raceway like a standard capping to permit installation of the receptacle within the duct body. The new unit is designed particularly for the 20-amp. receptacle. It also will accommodate various other large bodied devices in similar manner.

The cover was developed by the company in cooperation with Russell & Stoll Co., manufacturer of the Ever-Lok device. It is made of 19-gage steel and measures 4½ by 2⅛ inches. It is supplied with two mounting bridges and the necessary screws. It is finished in gray baked enamel.

If you write maker identify as **IEN - 4633**

SOLDERING . . Combined solder and flux in stable paste form

Source: AMERICAN SOLDER & FLUX CO.
Trenton Ave. & Norris St., Dept. IEN, Phila. 25, Pa.

No skill required

Tinol is a new combination of flux and solder in evenly distributed suspension in paste form. It is brushed over a metal surface, the active flux removing metal oxides and floating impurities away to produce a strong clean permanent bond. The material will penetrate through rust, grease and dirt so the work does not have to be cleaned. The flux and solder will not separate in storage or when the paste is handled.

If you write maker identify as **IEN - 4634**

GAGE . . Dial indicator in 140 models, jeweled and plain

Source: L. S. STARRETT COMPANY
100 Starrett St., Dept. IEN, Athol, Mass.

Details on request

The company announces a new line of dial indicators built to American Gage design specifications in a range of types, sizes and graduations. The line includes Regular and Non-Shock types with balanced or continuous dials, jeweled or plain bearings, English or metric graduations in four standard AGD Groups, plus a series of Long Range designs. Each model provides accuracy combined with sensitivity.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 4635**

JENKINS VALVES for Safety and Economy in L.P.G. SERVICES

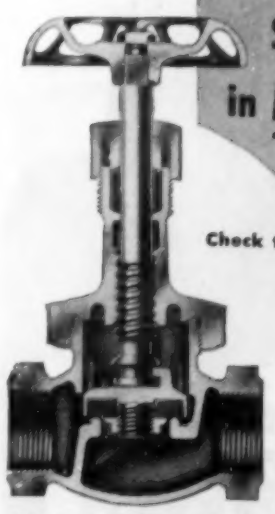


Fig. 506 BRONZE GLOBE for L.P.G. SERVICE 400 lbs. O.W.G.

Construction features of Jenkins Fig. 507 Check and Fig. 508 Angle L.P.G. Valves same as for above.

Check these special design features

- **Extra heavy, reinforced body** — takes all ordinary pipe strains; provides a safety factor far above any L.P.G. service needs.
- **Crowned seat** — insures positive tightness, meets N.B.F.U. test of 500 p.s.i. under seat when valve is closed.
- **Improved composition disc** — meets every test of L.P.G. service.
- **Deeper packing box** — and spiral, lubricated packing material permit spindle to turn with minimum friction.
- **All other parts specifically designed** and proportioned to meet rigorous requirements of critical L.P.G. service.

Ask your Jenkins Distributor for the new Jenkins L.P.G. Valve folder, or write: Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS JENKINS DIAMOND MARK

JENKINS VALVES

SINCE 1864

If you write maker identify as **IEN - 4636**

Lightweight HELIARC TORCH

is water-cooled...

FOR EFFICIENT INERT GAS WELDING AT LOW COST

You can make high quality welds every time with this lightweight, 300 amp. HELIARC HW-10 torch. Both the torch body and power cable have all-internal water-cooling for cooler operation even when welding continuously at full capacity. Yet cleaning is easy for all water passages are straight. Electrode adjustment is quick and simple, too. No wrenches needed. And electrode stub loss is minimized by an improved water-cooling system. Call your nearest LINDE representative today for more details on the HELIARC HW-10 torch.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The terms "Heliarc" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as **IEN - 4637**

T&B ENGINEERED

watertight service entrance cable connectors with Neoprene bushings

NOW

- FIT DOUBLE RANGE OF CABLE SIZES
- CODED IN 5 BRIGHT COLORS

That's right, T&B SEC connectors now have Neoprene bushings to accommodate a wide range of cable sizes . . . last longer, too. You need stock only one-half your usual inventory.

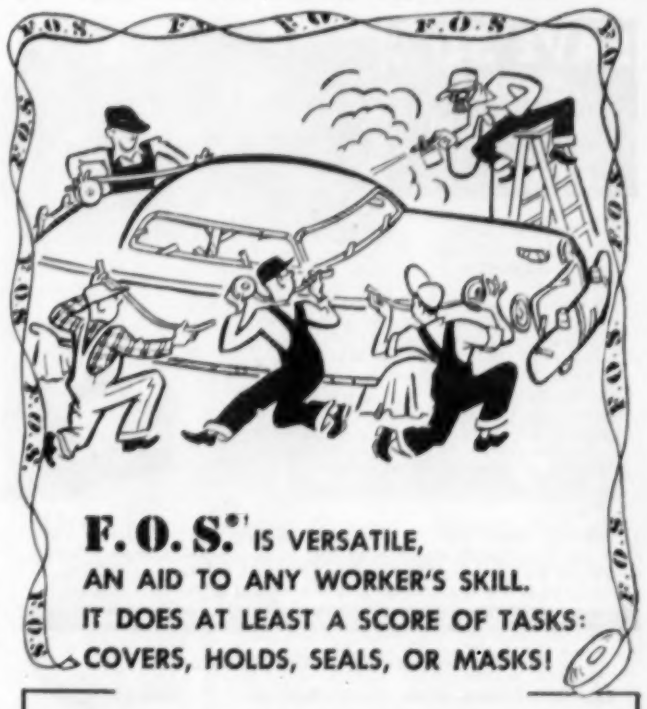
And they're *double* color-coded! First, 5 Neoprene bushing colors give at-a-glance size identification even after installation. Second, push-out paper discs in same colors are imprinted with catalog numbers and cable size.

Available in hex-gland and two-screw types . . . for complete range of service entrance cables. T41

1. *Brass retaining ring minimizes tightening friction . . . prevents cable twisting.*
2. *Bushing and body both tapered give double amount of take-up . . . assure positive, watertight seal on wide range of cable sizes.*
3. *Tubolite-finished steel gland nut . . . rustproof die cast zinc alloy body.*
4. *Color-coded neoprene sealing bushing . . . unaffected by oil, sunlight, or chemicals.*

THE THOMAS & BETTS CO.
Incorporated
60 Butler Street, Elizabeth 1, New Jersey
Thomas & Betts Ltd., Montreal, P.Q., Canada
MANUFACTURERS OF FINE ELECTRICAL FITTINGS SINCE 1898

If you write maker identify as **IEN - 4638**



F. O. S.† IS VERSATILE,
AN AID TO ANY WORKER'S SKILL.
IT DOES AT LEAST A SCORE OF TASKS:
COVERS, HOLDS, SEALS, OR MASKS!

You tape it best with F.O.S. Industrial Tape . . . product of

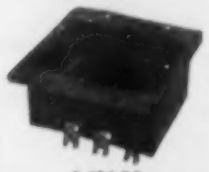
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U.S.A.

Write for samples, literature, prices †Friction One Side

If you write maker identify as IEN - 4639

For HEAVY DUTY WORK! Severest Electrical Services

P-506-CE—Plug with Cap



S-506-DB
Socket with deep Bracket

JONES PLUGS & SOCKETS

500 SERIES
Proven Quality!

For 5,000 Volts, 25 Amperes per Contact Alterable by Circuit Characteristics.

Socket contacts of phosphor bronze, knife-switch type, cadmium plated. Plug contacts hard brass, cadmium plated. Made in 2, 4, 6, 8, 10, and 12 contacts. Plugs and sockets polarized. Long leakage path from terminal, and terminal to ground. Caps and brackets, steel parkerized (rust-proofed). Plug and socket blocks interchangeable in caps and brackets. Terminal connections most accessible. Cap insulated with canvas bakelite.

Write for Jones BULLETIN 20 for full details on line.

Jones
HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP

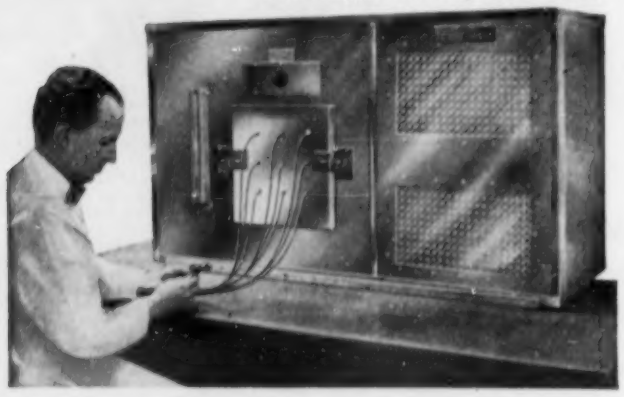
If you write maker identify as IEN - 4640

HIGH AND LOW TEMPERATURES

NEW BENCH-TYPE TEST UNIT

WEBBER
TRADE MARK REGISTERED
COMPLETE TEMPERATURE RANGE
TESTING UNITS

Combine high and low temperatures within the same cabinet with all controls self contained. Unit measures 50"x28"x20" with a testing chamber 12"x12"x12". Temperature range is from -80° F., to 185° F. Heat application is accomplished with reverse cycle refrigeration, which eliminates the hazards associated with open heating elements. A blower is provided for even distribution of temperatures and greater testing accuracy. Latch-type or hinge-type door optional. Accelerated pull-down to -80° in 30 minutes or less.
Write today for more complete information



INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC.
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 4641

SAVE 50% and more in Labor - Material with FencPainteR

For
WOOD - METAL
BRICK - STONE
CONCRETE

Hundreds of industries and institutions all over America are using the FencPainteR applicator system of painting at immense savings. It's five times faster than brushing methods. Irregular and corrugated surfaces painted with the same facility and covering power as smooth surfaces. One concern painted 6 ft. wire fence at a total cost of only 20c per lin. ft. FencPainteR enamels contain only top-notch ingredients — go much farther — are more economical in the long run.

SPECIAL TRIAL OFFER — Including industrial size FencPainteR and 5 gal. FencPainteR aluminum enamel, 1 gal. solvent. Complete, only **$57.00.** Enough to do 300 lin. ft. of 6 ft. chain link fence.
(Add $5.00 for gray, white or black — $10.00 for red or green).

THE ONLY ROLLER MADE WITH CAPILLARY ATTRACTION (PAINT HOLDING POWER)

FencPainteR Corporation

2314 W. Van Buren Street Dept. IE Chicago 12, Ill.

MAIL COUPON for new 32 page illustrated brochure with full details covering FencPainteR products and their use.

FencPainteR Corp., 2314 W. Van Buren St., Dept. IE Chicago 12, Ill.
☐ Please rush Free 32 page Brochure
☐ Send Special Trial Offer, complete
(Color desired _____) $_____
Name _____
Address _____
City _____ State _____

If you write maker identify as IEN - 4642

PUMP . . Motor-driven jet with tank for deep or shallow wells

Source: DEMING COMPANY
186 Broadway, Dept. IEN, Salem, Ohio

520 or 660 gph.

Minijet trade names a new jet type centrifugal pump. It is available in assembly with a motor, foot valve, pressure gage and 12-gal. tank for installation in a shallow well. It also can be supplied for shallow well duty with a storage tank holding 42, 80 or 120 gal., but in this case the tank, pump and fittings are shipped separately.

The self-priming pump is driven by a ½-hp. motor of vertical, ball bearing drip proof capacitor design with built-in thermal overload protection. The motor is interchangeable with any standard NEMA jet motor. The enclosed brass impeller is balanced and bored to fit the tapered end of the pump shaft. A compression sleeve type coupling fastens the stainless steel pump shaft to the motor shaft. The company's PAK seal prevents leakage along the pump shaft.

The jet body is located at the intake to the pump for shallow well installation. It is removed from this position and located in the well for deep well service. The jet body, tube and nozzle are made of brass. The foot valve and strainer and control valve also are brass.

If you write maker identify as IEN - 4643

PRESS TOOLS . . Punches and dies for short runs on light gage metals

Source: ALLIED PRODUCTS CORP.
1560 E. Milwaukee Ave., Dept. IEN, Detroit 11, Mich.

Template set-up

Ball lock retainers in these new tools take standardized punches and die buttons in round, square, oblong, or special shapes to specification, for press set-ups where die cost is a factor and where the material being perforated is light gage metal. The retainers can be positioned as required on T-slotted or threaded commercial die sets. Rubber cylinders provide the stripping action. The company's rubber covered springs can be specified.

Four punch shank diameters range from ⅜ to 1 inch. Four die bottom outside diameters are from ⅝ to 1¾ inches.

If you write maker identify as IEN - 4644

American Management Association, 330 W. 42nd St., New York 36, N. Y., announces publication of its 1954 program of work shop and orientation seminars for education by management of management. The seminars are designed primarily as sessions for interchange of knowledge and experience. Each seminar is a discussion group of not more than 15 executives under the guidance of a discussion leader and one or more associates. The publication, covering the period from February to June, 1954, is available on request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4645

BALL BEARING JOURNAL JACKS

- Low closed height (10 to 16 inches), and from 5 to 8 inches of lift mean that this handy jack can do a lot of jobs for machinery movers, builders, railroads, etc.
- Ball bearing-smooth operation, but plenty of lift capacity—15, 25, 35 or 50 tons!
- Simple, rugged and compact design. Sealed against dust and dirt, and all working mechanism is packed in grease and enclosed.
- Accurate control of load at all times, and load can be held at any height.

Write for new Bulletin 1515-B and details on BUDA's complete line of mechanical and hydraulic jacks.

"A jack for every job"

BUDA
THE BUDA CO.
Harvey, Illinois
Division of Allis-Chalmers Manufacturing Company

If you write maker identify as IEN - 4646

If your product calls for ball bearings, roller bearings or hard-to-make precision parts just remember Aetna can supply them all . . . in the volume you need . . . to your most exacting metallurgical and precision specifications. And when you deal with Aetna you draw on a 38-year background of engineering knowledge and production experience hard to match anywhere. A letter or phone call will place our engineers at your disposal.

AETNA BALL AND ROLLER BEARING COMPANY
Division of
Parkersburg-Aetna Corporation
4600 Schubert Avenue
Chicago 39, Illinois

Aetna 38 YEARS OF Quality
ANTI-FRICTION PRODUCTS
Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Hardened and Ground Washers • Sleeves • Bushings • Miscellaneous Precision Parts

If you write maker identify as IEN - 4647

— the Counter —

YOU'VE BEEN WAITING FOR!

BY SODECO GENÈVE

- **Instantaneous reset** . . . to zero at a touch of the button
- **Compact** . . . flush-mounting plate measures only 1-5/16" x 1-3/16" — counter is only 4-3/8" deep
- **Fast** . . . standard models count up to 10 impulses/sec. *(Special models available with speeds up to 25 impulses/sec.)*
- **Half-numbers** . . . show when coil is energized
- 3, 4, or 5 digit models

Write for Bulletin 21

RUGGED
ECONOMICAL
ACCURATE

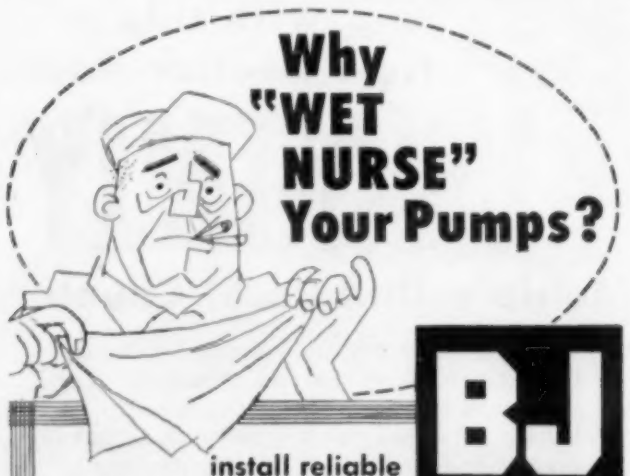
SODECO

LANDIS & GYR, INC.

45 West 45th Street • New York 36, N. Y.

If you write maker identify as IEN - 4648

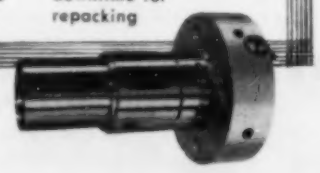
Why "WET NURSE" Your Pumps?



install reliable **BJ**

mechanical seals

- Easy to install and maintain
- Protect against volatile liquid hazards
- Sizes to fit any pump
- Eliminate unnecessary downtime for repacking



Telephone your nearby BJ Pump sales office or contact:

Byron Jackson Co. *Since 1872*
P.O. Box 2017, Terminal Annex
Los Angeles 54, California

If you write maker identify as IEN - 4649

for

OVER-RUNNING, BACKSTOPPING, INDEXING:

WHY SPECIFY A CLUTCH WITH LESS THAN MAXIMUM TORQUE CAPACITY?

You're assured a full complement of torque capacity when you specify today's modern clutch design. The Formsprag Clutch, with a full complement of sprags, provides more capacity in less unit space than any other clutch. You're assured long life too: an infinite number of changing contact points prevents excessive wear. Design simplicity permits rebuilding—three times. For more facts, write for this 10-page folder of descriptive engineering data, on your letterhead please.

DISTRIBUTORS IN PRINCIPAL CITIES

FORMSPRAG COMPANY
23591 Hoover Road • Van Dyke, Michigan

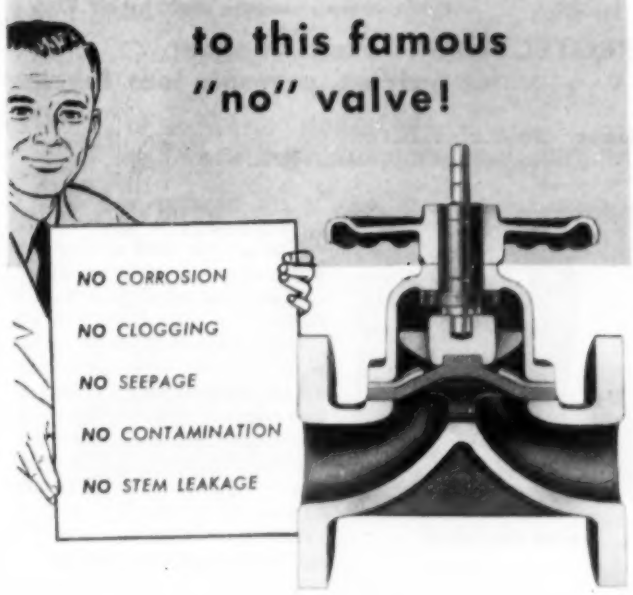
FULL COMPLEMENT

FORMSPRAG *Clutches*

If you write maker identify as IEN - 4650

Say Yes...

to this famous "no" valve!



For better results, use the versatile

GRINNELL-SAUNDERS DIAPHRAGM VALVE

Piping in today's complex industrial plants is an exacting science involving the handling of highly corrosive fluids, gases, compressed air, beverages, foods and suspended solids . . . in lines where corrosion, abrasion, contamination, clogging, leakage and maintenance are costly factors. Under such conditions, the amazing performance of the Grinnell-Saunders Diaphragm Valve explains its acceptance by industry after industry.

The basic design of the valve is one big advantage. Working parts are completely isolated from the fluid stream which, in the case of corrosive acids, means longer valve life. Then, there is the matter of economy. With Grinnell-Saunders Diaphragm Valves, it is usually possible to go to less expensive body materials, to which special body linings can be added. Replacement and maintenance expenses, moreover, are greatly reduced. No wonder industry after industry is "Saying Yes" to Grinnell-Saunders Diaphragm Valves. Write for catalog.

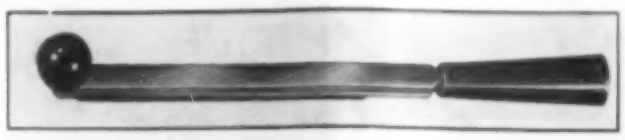
GRINNELL
WHENEVER PIPING IS INVOLVED

Grinnell Company, Inc., Executive Offices, Providence, R. I.
Sales Offices and Warehouses in Principal Cities

If you write maker identify as IEN - 4652

FILING . Carbide hand tool for hardened steel, ceramics, plastics

Source: SEVERANCE TOOL INDUSTRIES INC.
740 Iowa St., Dept. IEN, Saginaw, Mich.



For production filing and burring

New design of the carbide hand file, previously described IEN-3319-48, presents a ¾ by 6-in. carbide cutting area. It is available with 16, 25 or 40 teeth per in. for coarse, medium and fine action. Original list price is $19.75 for the coarse and medium cuts, $24.50 for the fine cut.

The carbide section can be returned to the company for regrinding at a list price of $8 for the coarse and medium and $10 for the fine cut. The original list price is subject to a 25 per cent discount in dozen lots. The carbide teeth can be resharpened many times.

If you write maker identify as IEN - 4653

CLEANING . . Free-flowing powder for solution in steam spray equipment

Source: OAKITE PRODUCTS INC.
116-A Rector St., Dept. IEN, New York 6, N. Y.

Technical data upon request

Composition 93 is a new white powdered material. It dissolves in water and is particularly suited for use in steam spray equipment where the solution is siphoned from an auxiliary tank. The material goes into solution when added to water, to 20 grains hardness, without precipitate or turbidity. Normal working concentration ranges from ¼ to 4 oz. per gal. of water. The solution is non-toxic and does not give off an offensive odor. It is listed as a qualified product meeting Federal Specification Steam Cleaner P-S-00751.

If you write maker identify as IEN - 4654

EXTINGUISHING . . Sprinkler head employs wide angle spray deflector

Source: GLOBE AUTOMATIC SPRINKLER CO.
250 Park Ave., Dept. IEN, New York 17, N. Y.

"Spray" type

Coverage has been increased from 100 to 130 sq. ft. per head by new deflector design of the company's sprinkler head, previously described IEN-11573-52. Otherwise the design remains the same as in the previous unit in which a solid chemical is employed as the fusible element.

This chemical can be selected to melt and release the water held back by the head at any of six temperatures between 135 and 415 deg. F. Corrosion resistant materials are used in the construction. The base carries a ½-in. pipe thread.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4655

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM CO.

"MX" ABRASIVE PRODUCTS

finish as they cut . . . resist loading, even on soft metals, alloys

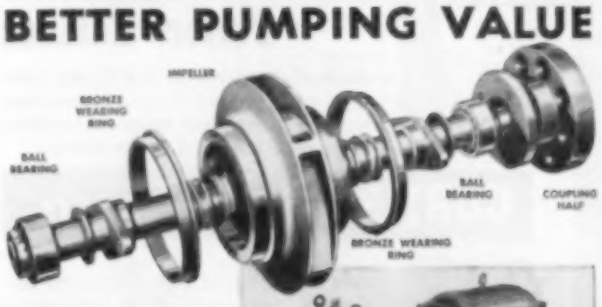
Send for this FREE booklet

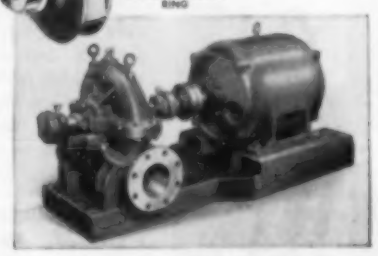
Fast-cutting MX Abrasive Products by CARBORUNDUM finish as they cut . . . often let you eliminate one or more operations. They give excellent performance on soft metals such as copper, magnesium, aluminum and aluminum alloys—as well as on steel and steel alloys. MX abrasive products are available in a wide range of grit sizes, and in an extensive selection of forms and shapes, including: Straight wheels for combined deburring and light polishing; mounted wheels and points for high speed portable grinding in hard-to-reach spots; sticks for hand finishing and spinning operations; discs for grinding light welds, removing flash and blending and semi-finishing flat surfaces; depressed center wheels for light and medium weld removal and rough blending flat surfaces—as well as light cutting-off and slotting; production cut-off wheels for non-ferrous metals and dry-cutting with portable equipment; and general purpose cut-off wheels. Complete information on MX products is contained in this 40-page booklet, which is yours for the asking. Use the inquiry form provided by this publication, or—if you prefer, write **The Carborundum Company,** Dept. IEN 81-45, Niagara Falls, New York.

"Carborundum" and "MX" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

If you write maker identify as IEN - 4656

INSIDE STORY OF A BETTER PUMPING VALUE





IMPELLER AND SHAFT ASSEMBLY OF A "BUFFALO" DOUBLE SUCTION PUMP

Take a look at the "heart" of a clear water pump built for performance and endurance! Note the full ball bearing support on both ends of the oversize shaft; the sturdy, high-efficiency enclosed impeller (water enters *both* sides in *equal* volume and pressure for maximum delivery). Simply formed passages in the casing, too, minimize friction. Coupling is Buffalo pin and rubber bushing type — Self-aligning. WRITE FOR BULLETIN 955-Q for further details on your best buy for moving clear water in 10 to 14,000 gpm capacities!

BUFFALO PUMPS, INC.
496 Broadway Buffalo, New York
Subsidiary of Buffalo Forge Company
Canadian Pumps Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

If you write maker identify as IEN - 4657

Have You a temperature control problem?

STANDARD KLIXON THERMO-SNAP® CONTROLS will meet your requirements ... usually at lower cost!

Because Klixon Snap-Acting Temperature Controls are simple and foolproof with *no* complicated operating mechanism, they *always* provide accurate control in every application.

Small, light-weight, compact, they fit into products without complicated design alterations. They operate surely and dependably even under shock, vibration motion or altitude no matter what positions they are mounted. And because you can usually find a standard Klixon Thermo-Snap Control to do the job properly, you save money by eliminating new thermostat design and manufacturing costs.

What's your temperature control problem . . . low and high limit controls, fuel delay switches, tube and rectifier cooling, fan switches, temperature control . . . Klixon Thermo-Snap Controls are meeting the requirements for these and other applications in military and civilian products, daily.

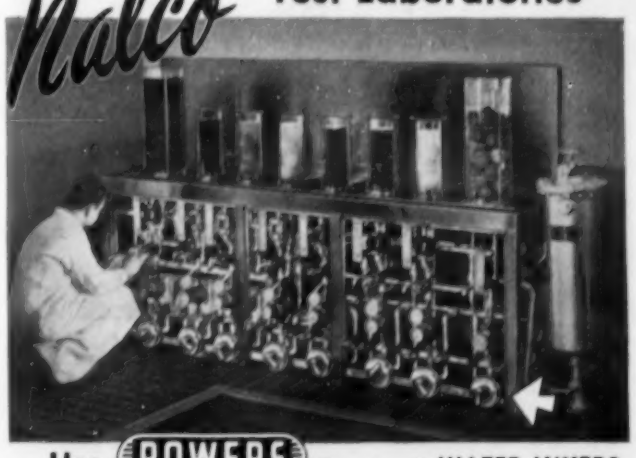
Klixon Thermo-Snap Controls are available in many hermetically sealed and open types in a wide variety of operating temperature ranges.

METALS & CONTROLS CORPORATION
SPENCER THERMOSTAT DIVISION
204 FOREST STREET, ATTLEBORO, MASS.

KLIXON

If you write maker identify as IEN - 4658

Nalco Test Laboratories



Use POWERS Thermostatic WATER MIXERS

POWERS Type HVC Thermostatic WATER MIXER
•
Write for Bulletin 365

for Accurate Control in testing operation shown above.

Photo shows National Aluminate Corp. equipment for visually testing solubility rate of Nalco chemical balls to determine exact actions of various water treatments under actual operating conditions in Nalco ball feeders.

Contact POWERS when you want accurate water temperature control. Most complete line made. (b67)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in over 50 Cities

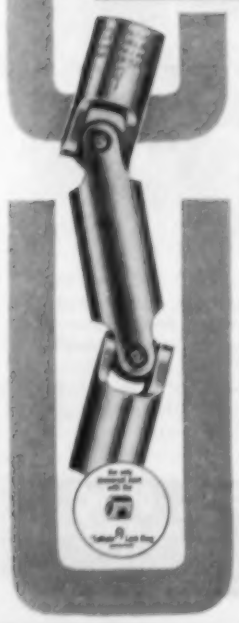
Over 60 Years of Automatic Temperature and Humidity Control

If you write maker identify as IEN - 4659

Perfect Balance

Each of the elements in a Curtis Joint is precisely proportioned in dimensions, heat treatment and steel composition to provide balanced performance.

CURTIS UNIVERSAL JOINTS



One advantage of this integrated balance is demonstrated in laboratory tests which prove that Curtis standard stock universal joints — although not specifically intended for high speed application — perform successfully at speeds up to 3,000 or 4,000 r.p.m.

ONLY CURTIS OFFERS ALL THESE ADVANTAGES

Availability — 14 sizes always in stock; bored or unbored hubs. 6" hub diameter joints or special machining to specifications.

Simplicity—fewer parts, simpler construction.

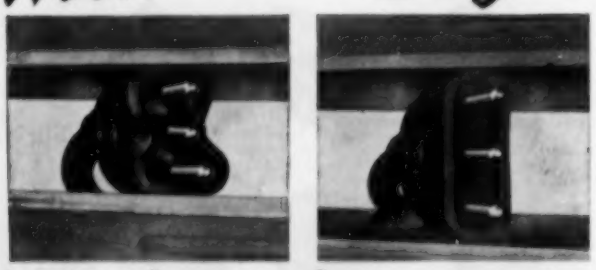
Government Tests — complete equipment for government tests in our plant.

Not sold through distributors; write direct for free engineering data and price list.

CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Ave., Springfield, Mass.
As near to you as your telephone
Not sold through distributors
Trade Mark **A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919**

If you write maker identify as IEN - 4660

Heres More Proof!



JOY Electrical Connectors are industry's best value!

At left, you see a JOY oval plug subjected to excessive pressure between platens of a molding press. Right hand picture shows this same plug exactly as it looked immediately after pressure was released. *Note absence of distortion!* Subsequent tests disclosed no damage to insulation, wiring or contacts . . . however this is only one of many reasons why JOY one-piece molded Neoprene connectors reduce maintenance costs. Bulletin MC108 provides additional information. Ask us for your free copy, today.

JOY MANUFACTURING CO.
Henry W. Oliver Bldg., Pittsburgh 22, Pa.
In Canada: Joy Mfg. (Canada) Ltd., Galt, Ont.

JOY — Source of Industry's Favorite Electrical Connectors since '28

CO 254.1

If you write maker identify as IEN - 4661

RUGGED GUARDIAN of Persons and Property

Bothersome intruders may roam your grounds . . . property appearance can be spoiled . . . employees need accident protection. These are jobs for Continental, the better installed, longer lasting chain link fence. Get peace-of-mind and protection permanence by contacting your nearest Continental sales office now.

CONTINENTAL STEEL CORPORATION
Kokomo, Indiana
Send me FREE copy of "Planned Protection" —complete manual on property protection.
Name
Address
City State

*TRADE MRK. REG. U.S. PAT. OFF.

CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 4662

TRUCK . . Engine-driven fork lift equipped with hydraulic transmission

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.

Gear shifting eliminated

Hydratork hydraulic transmission is now available on the Carloader line of fork trucks, in 3,000 to 5,000-lb. load capacities, as a further development for this type of drive on the Utilitruc line with ratings at 6,000 to 7,000 lb., previously described IEN-8215-53. The drive combines a torque converter with a constant mesh transmission for operation of the engine driven fork truck by means of an accelerator, a brake pedal and a forward-reverse selector lever on the steering column. The new drive adds $270 to the base price of the truck.

Changes in speed are obtained by control at the engine throttle. The direction selector lever is connected with an electric switch that prevents the engine from starting unless the lever is in neutral position. Partly depressing and releasing the brake pedal actuates a valve which cuts the power to the drive wheels. Further depression of the pedal engages the standard hydraulic brakes. The transmission itself is lubricated by the hydraulic fluid.

If you write maker identify as IEN - 4663

RECORD KEEPING . . Projector magnifies, displays 16-mm. microfilm

Source: EASTMAN KODAK CO.
343 State St., Dept. IEN, Rochester 4, N. Y.

$20 per month

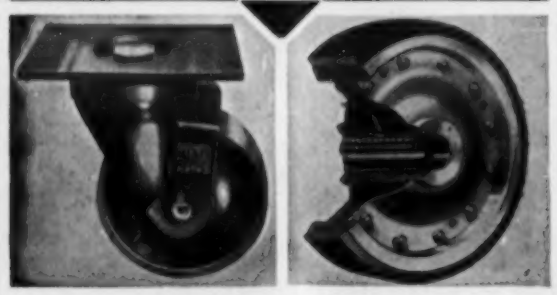
Motor drive has been added to the company's Film Reader, previously described IEN-2986-53. The design now provides for three magnifications at 23, 30 and 40X by interchanging lenses. Film loading and operating controls are located at the front below the eye level screen. A single knob conntrols direction and rate of film travel across the screen. Scanning speed, in either direction, can be adjusted from slow to high speed for either advance or rewinding.

A second control provides for continuous film movement at a selected speed. The images remain in sharp focus by means of rotating optical flats whether the film is at rest or in motion. Additional controls erect the image and control its side to side position. Facsimile prints of the enlarged film image can be made under normal room lighting by using a special sensitized photographic paper.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4664

Always SWIVEL and ROLL



Darnell Casters and Wheels start cutting costs from the very first day of installation. Easy rolling and swivelling increase employee efficiency, save floors and help add to production.

Write for Free Darnell Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY), CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 4665

BEARING . . Self-aligning sleeve for pillow block housing, ½ to 1 inch

Source: RANDALL GRAPHITE BEARINGS INC.
1000 S. Greenlawn Ave., Dept. IEN, Lima, Ohio

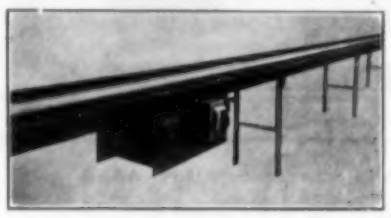
Ball holds oil

Formed steel replaces the hollow cast iron ball employed in the company's pillow block sleeve bearing, previously described IEN-6258-49. The new process of forming the ball, for which patent has been applied, reduces the cost of the previous design and presents a smooth metal surface and a large reservoir for oil. The ball assembly is available with the company's graphited bronze bushing or with a sintered bronze bushing in sizes from ½ to 1 inch. The ball assembly can be purchased alone for use on original equipment or other built in bearing applications.

If you write maker identify as IEN - 4666

CONVEYING . . Table mounted belt and motor drive in standard sections

Source: SPEEDWAYS CONVEYORS INC.
169 Speedways Bldg., Dept. IEN, Buffalo 13, N. Y.



For straight runs

A box frame is topped with a steel sheet to carry the active run of belt while the box encloses the return run in this new Speedtable. A roller bed can be specified, if friction is a factor. The belt can be canvas, oil resistant neoprene or rough top. Belt width is from 10 to 20 inches. The conveyor is made in specified length with a Speedrive in any section. Motor rating meets requirements.

If you write maker identify as IEN - 4667

PROTECTING . . Plastic helmet for welders, prevents lens fogging

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Glass reinforced

The plastic shell of this new heat-resistant, moisture-proof, non-warping seamless helmet is fitted with a head gear in adjustable design. It is provided with a ratchet type device and a four-position stop so the helmet remains in place for welding in any position. Black finish is standard. A flip-front can be specified. Weights are 25 and 29 ounces. The unit is ventilated for cool operation and to prevent lens fogging.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4668

TAKE THE **LOAD** OFF YOUR MIND with **Fairbanks®** **STEEL-FRAMED PLATFORM TRUCKS**

Built to last — Non-tilt types available in heavy, medium or light duty load classifications with pipe handles, pipe racks or angle iron racks, and with any type of wheel. Platform sizes 24" x 42" to 36" x 72". Tilt Types in some sizes also available.

Fairbanks Steel-Framed Hand Trucks, a style for every industrial use.

Series "21" LOCK-WELD Swivel Casters — the new construction with no king-pin.

THE **Fairbanks** COMPANY
393 LAFAYETTE STREET • NEW YORK 3, N. Y.
Branches: New York 3 • Pittsburgh 22 • Boston 10 • Rome, Ga.

VALVES • DART & PIC UNIONS • TRUCKS • CASTERS

If you write maker identify as IEN - 4669

MILLING . . Router guide bushing for use in plastic laminate templates

Source: HI-SHEAR RIVET TOOL CO.
8924 Bellanca Ave., Dept. IEN, Los Angeles 45, Calif.

Ask for folder

Pilot length of this new router guide bushing can be specified at 0.250 or 6.25 inches. The guide hole ranges from No. 40 through ⅜ inch. The bushing is designed to embed into a plastic laminate template where it is rivet or screw attached and centered by pouring resin around the pilot while it is centered on a master work piece.

The company has prepared a 6-page folder presenting detail instruction on the manufacture of laminate plastic anchor bushing drill and router templates. The folder gives directions, names materials and sources.

If you write maker identify as IEN - 4670

HEATING . . Electric transformer and flexible elements for wood gluing

Source: WASHBURN ELECTRIC CO.
202 Sherwood Place, Dept. IEN, Englewood, N. J.

Ask for Bulletin 101A

Model BU-8 is a new 0.85-kva transformer to provide low voltage output as the heat source for a flexible stainless strip steel electric heating element to 2 in. in width by 7 ft. in length. This element is employed to heat wood assemblies to 300 or 350 deg. F. to provide a curing period of a minute or less for thermosetting adhesives. The element can be formed around sharp radii, corners, curves. The new unit lists at $95.

The company is prepared to study any gluing problem and, if resistance heating is practical, to quote on the design and manufacture of a complete gluing set-up to include assembly jigs, pressure devices, heating elements, transformers and pre-heating units. The pressure devices can be mechanical, pneumatic or hydraulic. In certain cases, it is possible to use a single large transformer with multiple output taps to supply several jigs from one power source.

If you write maker identify as IEN - 4671

SWITCH . . Lever operated for "shorting" duty on small engines

Source: McGILL MFG. CO.
100 N. Lafayette St., Dept. IEN, Valparaiso, Ind.

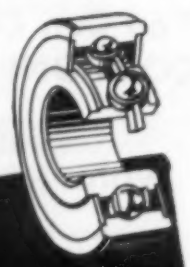
On-off action

Model 73 designates a new ignition switch that shorts out the magneto on a small internal combustion engine. The switch can be mounted in any position on equipment driven by the engine, or on the engine itself, so power can be cut off without danger of shock or burned fingers. The one terminal attaches to the primary coil of the engine.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4672

How cost-wise buyers rate
STANDARD STOCK
BALL BEARINGS



GOOD
BETTER
✓ BOSTON Gear

BALL BEARINGS
Radial • Thrust • Combination
Single Row • Double Row
—for Speeds up to 5000 RPM

IN STOCK AT 92 BOSTON Gear DISTRIBUTORS
at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the Distributor nearest you.

Get this Catalog . . . lists 5112 standardized machine parts . . . your reliable "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write . . . Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN - 4673

HEATING . . Induction equipment to anneal, harden, braze and solder

Source: LINDBERG ENGINEERING CO.
2450 W. Hubbard St., Dept. IEN, Chicago 12, Ill.

Bulletin 1440

Model LI-5A-1 designates new design of the company's 5-kw. single-station induction heating equipment for operation on 220, 440-volt single-phase 60-cycle input. Output is 5 kw. or 284 btu. per minute with output frequency at 450 kc. Power consumption is 12.5 kva. maximum at 90 per cent power factor. The new unit measures 39 by 39 by 72 inches. It weighs 2,200 pounds.

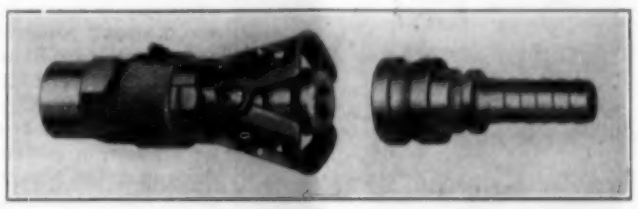
Assembly is in a sheet steel housing designed for industrial use and to minimize radio frequency radiation to comply with FCC regulations. Interior steel partitions isolate the oscillator, the power and control components. All are accessible for inspection through housing doors.

Checklite indicating lamps are located on the housing front. They indicate any abnormal operating conditions at the protective devices. The temperature controlled water cooling equipment has been redesigned to minimize water consumption and eliminate the possibility of moisture condensation on the interior. Molded porcelain water coils are employed. An interlock prevents application of power when the cooling water is not flowing. Operating controls are accessible from the outside of the equipment.

If you write maker identify as IEN - 4674

HOSE FITTING . . Valve coupling to disconnect and close an air line

Source: C. B. HUNT & SON INC.
1919 E. State St., Dept. IEN, Salem, Ohio



Swivels freely

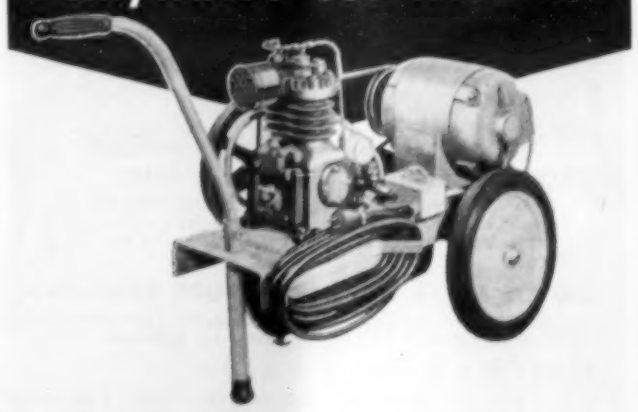
Supply air enters from the left as this new Quick-As-Wink valve coupling is shown. The air is ported radially under a knurled sleeve located between the entering end and a pair of hinged latches. Flow is shut off and relief ports are opened to vent the outlet side when the sleeve is drawn back. This position can be locked by rotating the sleeve in its retracted position through 90 degrees.

The outlet portion of the fitting slides into place over an O-ring. It is locked in connected position by the latches and the sliding sleeve is brought forward to lock the latches so they cannot open. The sleeve then permits passage of the air through the fitting from the radial ports to the outlet. The arrangement provides for quick connection and disconnect, the latter following relief of any air pressure that may have been trapped on the outlet side. The coupling is available in ¼ to ¾-in. sizes with hose or male or female pipe threads. It is suited for air pressure to 250 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4675

Have Compressed Air Anywhere You Need It



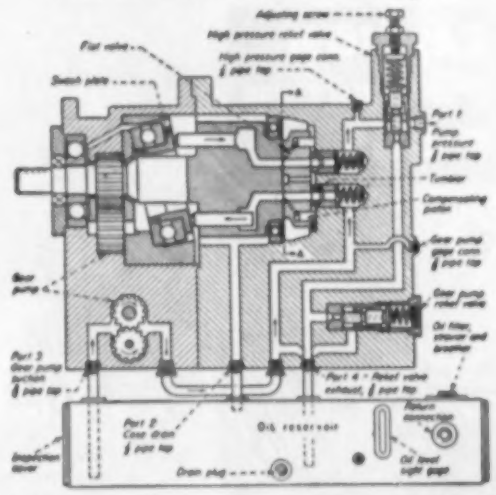
New DeVilbiss Portable Air Compressors bring air to the job for spray painting, air tools, emergency service, or on-the-spot air supply. Available in ½ or 1 hp class, gas and electric models. Delivered pressure 60 or 100 pounds. Can even be carried in the trunk of your car. Write today for full details.

DEVILBISS
THE DEVILBISS COMPANY
Toledo, Ohio
Santa Clara, Calif. • Barrie, Ontario • London, England

If you write maker identify as IEN - 4676

HEAVY DUTY HYDRAULIC POWER PUMPS

Pressures to 3000 & 5000 psi



The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are: patented balanced small flat valves with controlled oil film between working surfaces; patented small one piece rolling pistons; patented quiet reverse flow relief valves; 100% supercharge that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN - 4677

J-M BLAZECRETE speeds refractory repairs . . .

That's why it pays you to use this hydraulic-setting refractory for temperatures to 3000F

REPAIR old refractory linings—or build new ones—quickly and economically with Blazecrete*. For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, Blazecrete adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast . . . without ramming or tamping.

Three types of hydraulic-setting Blazecrete are available.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

*Reg. U. S. Pat. Off.

JM Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as IEN - 4678

first really new development in safety spectacles in years!
WILLSON "Contour-Spec"*

Style WCS47
Covered by Design Patent 168,988

New... hinged bridge gives snug, comfortable fit...self-adjusting to any facial contour!

1 New hinged bridge combines the flexibility of cup-type goggles with the lightweight, compact protection of safety spectacles.

2 One all-purpose size permits universal fit. Bridge hinge gives automatic adjustment to any bridge width from 18-26 mm.; one eye size—47 mm.—fits everybody. *No need to stock a variety of bridge and eye sizes.*

3 Plastic nose-and-cheek pads provide *full closure* around eye cavity.

4 Contour-shaped adjustable plastic-and-cable temples hold spectacles firmly in place.

5 Matching sideshields are perforated plastic, providing protection at sides—*fold back* for pocket compactness.

6 Butyrate frame—*toughest plastic used for spectacles.* Standard frame is flesh colored, fitted with 6-curve Willson Super-Tough* glass lenses. Available also with green frame and sideshields, fitted with Willsonite* Super-Tough green glass lenses.

Hinged to fit any face snugly!

Order a supply of Contour-Specs from your Willson distributor. Let your workers try their amazingly greater comfort, and see how they're preferred over ordinary safety spectacles!

More Than 300 Safety Products Carry This Famous Trademark
WILLSON
Established 1870
*Trademark
WILLSON PRODUCTS, INC., 217 Washington Street, READING, PENNA.

If you write maker identify as IEN - 4679

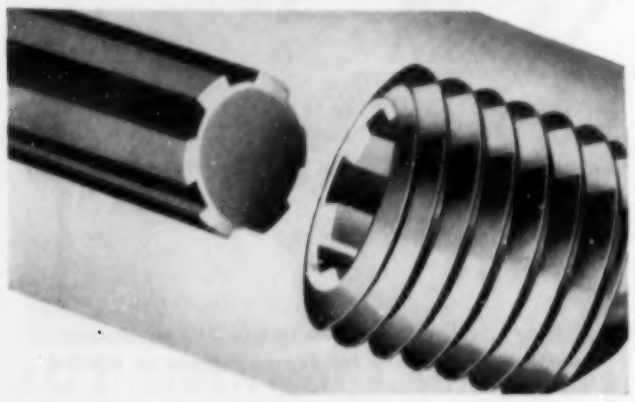
Write TODAY for DP Bulletin covering the most complete line of Cannon Rack and Panel Connectors. Cannon Electric Company, 3209 Humboldt Street, Los Angeles, California. Factories in Los Angeles; East Haven; Toronto, Canada; London, England. Representatives and distributors in all principal cities.

Refer to Dept. 112

CANNON ELECTRIC

Since 1915

If you write maker identify as IEN - 4680



Hold Tight with Bristol's exclusive multiple-spline

• These flush-fitting set screws can be set tighter, easier, faster — wherever design considerations dictate. The added holding power of the multiple-spline lets you use fewer and smaller screws with no loss of strength. Withstand severe shock and vibration. Sizes: 0 wire to 1/2 in. diameter. Get them from your industrial distributor. Write for free bulletins showing applications. A.4.5

BRISTOL'S SOCKET SCREWS

Hex and Multiple-Spline Socket Screws, Cap and Set

THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.

If you write maker identify as IEN - 4681

KENT

FLOOR MACHINES CUT LABOR COSTS 18.9%

SEND NOW for facts and literature showing complete line of Kent Floor Machines and Industrial Vacuums that will do your job at lower cost. See how Kent's exclusive Offset Design and many other floor machine features permit *faster* and *better* work . . . cause *less* fatigue . . . and *reduce* maintenance costs.

Depend on Kent — 41 Years of Leadership

KENT CO., INC., 437 Canal St., Rome, N.Y.

Send immediately complete literature on Kent Floor Machines that cut labor costs 18.9%. Also send information on Industrial Vacuum Cleaners.

Firm Name .....

My Name .....

Address .....

City ..... State .....

If you write maker identify as IEN - 4682

SWITCH . . Sealed assembly for use in exposed aircraft locations

Source: MICRO DIVISION
30 E. Spring St., Dept. IEN, Freeport, Ill.

Bulletin P79

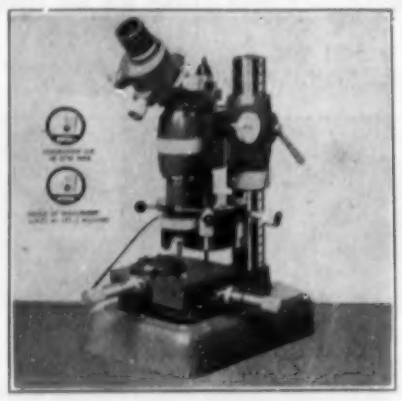
Series EH designates a new hermetically sealed Type-20HSI split contact precision switch and an aluminum housing to protect it. The housing provides a means to mount the assembly from either side. Drain holes and slots release moisture that might collect on the interior. A five-hole seal plug prevents moisture from draining into the conduit opening. The hermetically sealed switching unit itself is sealed in inert gas so moisture cannot form on the contacts. The sealing also provides for uniform electrical performance independent of changes in atmospheric conditions.

The switch rates 1 amp. on 110-volt ac., 0.6 amp. on 110-volt dc. at elevations between sea level and 20,000 feet. Overall dimensions are 3⅝ by 1 by 6¾ inches. Operating force is 9 pounds. Total plunger travel is ⅜ inch.

If you write maker identify as IEN - 4683

TESTING . . Brinell instrument makes and measures minute impression

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.



You cannot see the mark

An impression, so small that it cannot be seen without a microscope, is made by the diamond penetrator in this new Brinell instrument to test small and highly finished work for hardness. The instrument is suited also to check electroplating deposits and thin foils.

It includes an assembly of the diamond pointed penetrator and a 400X microscope that positions above the impression to read hardness by measuring with a reticule scale and vernier to 0.0005 mm. Coarse impressions, such as those made by a Brinell ball, can be measured with a microscope. A coordinate measuring stage is provided.

If you write maker identify as IEN - 4684

Black, white, red, blue, yellow are the five available colors in a new line of color foil to mark electrical wire harness made with nylon insulation. The foil applies in electrically heated press type equipment, also available from M. Swift & Son, Inc., Dept. IEN, Hartford, Conn.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4685

SAFETYMIX

EXTRA SHOWER SAFETY . . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS

. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT

. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE

. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE

. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

If you write maker identify as IEN - 4686

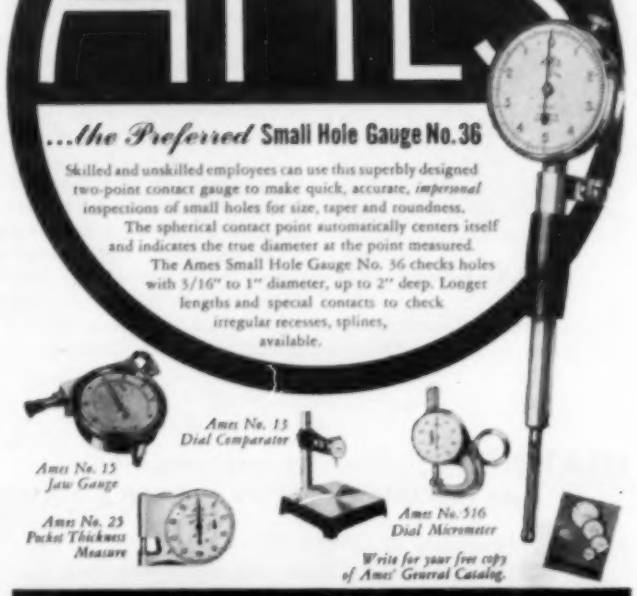
AMES

...the Preferred **Small Hole Gauge No. 36**

Skilled and unskilled employees can use this superbly designed two-point contact gauge to make quick, accurate, *impersonal* inspections of small holes for size, taper and roundness.

The spherical contact point automatically centers itself and indicates the true diameter at the point measured.

The Ames Small Hole Gauge No. 36 checks holes with 3/16" to 1" diameter, up to 2" deep. Longer lengths and special contacts to check irregular recesses, splines, available.



Write for your free copy of Ames' General Catalog.

Representatives in principal cities. B. C. AMES CO. *33 Ames Street Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

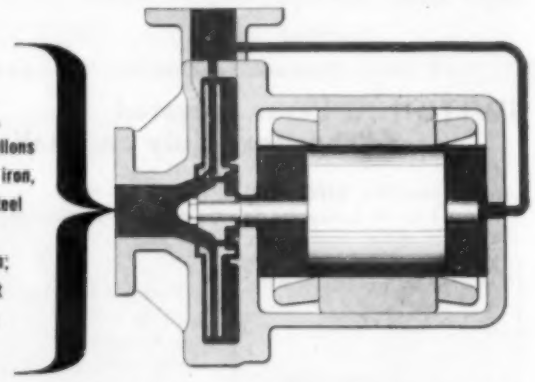
If you write maker identify as IEN - 4687

Chempump

THE PUMP THAT CAN'T POSSIBLY LEAK

...no mechanical seals...no stuffing box

⅛ to 3 horsepower, 0 to 180 gallons per minute; iron, stainless steel or monel construction; prices start at $96.00.



Think of what this means when handling toxic, corrosive or expensive process fluids. Chempump, with its magnetically-driven enclosed rotor can work—and save—for you, too. It is performance-proved in over 6 years of field experience. Write for complete data.

CHEMPUMP CORPORATION
1302 EAST MERMAID LANE • PHILA. 18, PA.

If you write maker identify as IEN - 4688

You Can Cut MOTOR COMPONENT COSTS with PHOENIX *Brush Holders*

PHOENIX Molded or Assembled Motor Brush Holders are custom-designed to your exact specifications—yet delivered to you at mass production costs!

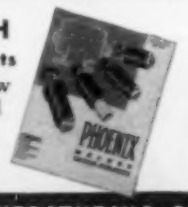
Secret is a wide range of stock tools which produce an infinite variety of uniform top-quality, close-tolerance brush holders.

Take a hint from the large number of manufacturers already saving on component costs with Phoenix . . . Get the full details now!

SEND FOR CATALOG 54H

Shortcut to Lower Production Costs

New Phoenix Catalog shows how to order customized standard brush holders to fit your needs. Free on request.



PHOENIX ELECTRIC MANUFACTURING CO.
711 West Lake Street Chicago 6, Illinois

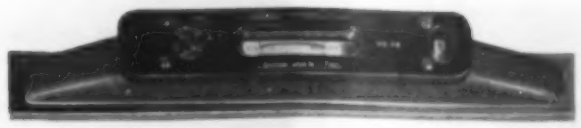
If you write maker identify as IEN - 4689

If you write maker identify as IEN - 4690

If you write maker identify as IEN - 4692

GAGE . . Spirit level to align and inspect equipment setups

Source: LUFKIN RULE CO.
Dept. IEN, Saginaw, Mich.



For precision alignment

Master No. 59 designates a new alloy iron spirit level measuring 15 in. in length by 1½ in. in width and 3 in. in height. It weighs 6 pounds. Two level vials are set at 90 deg. with each other in positions where they are protected against breakage. They are covered by a top plate made of a non-conductive insulating material. Each level is packed in a felt cushioned shock resisting wood box with a hinged cover. The assembly includes an adjusting screw for sensitive accurate setting. The main vial is graduated in divisions equalling 0.0005 in. per foot. List price is $75.

If you write maker identify as IEN - 4693

LUBRICATING . . Thread compound prevents seizing at high temperatures

Source: CRANE PACKING CO.
1800 Cuyler Ave., Dept. IEN, Chicago 13, Ill.

Packaged in quarts, pints, half-pints

Thred-Gard is a new semi-liquid compound for application on bolt and nut threads by means of a brush prior to completing the fastening connection. The non-hardening compound acts as a lubricant. It prevents seizing and galling and permits free removal after prolonged exposure to temperatures to 1,200 deg. F. Assemblies can be drawn up tightly without undue strain. The material acts as a protective coating to keep threaded surfaces smooth and to insure pressure tight metal-to-metal contact.

If you write maker identify as IEN - 4694

TESTING . . Linearity checker for precise electrical instruments

Source: MICROMETRICAL MFG. CO.
2821 S. State St., Dept. IEN, Ann Arbor, Mich.

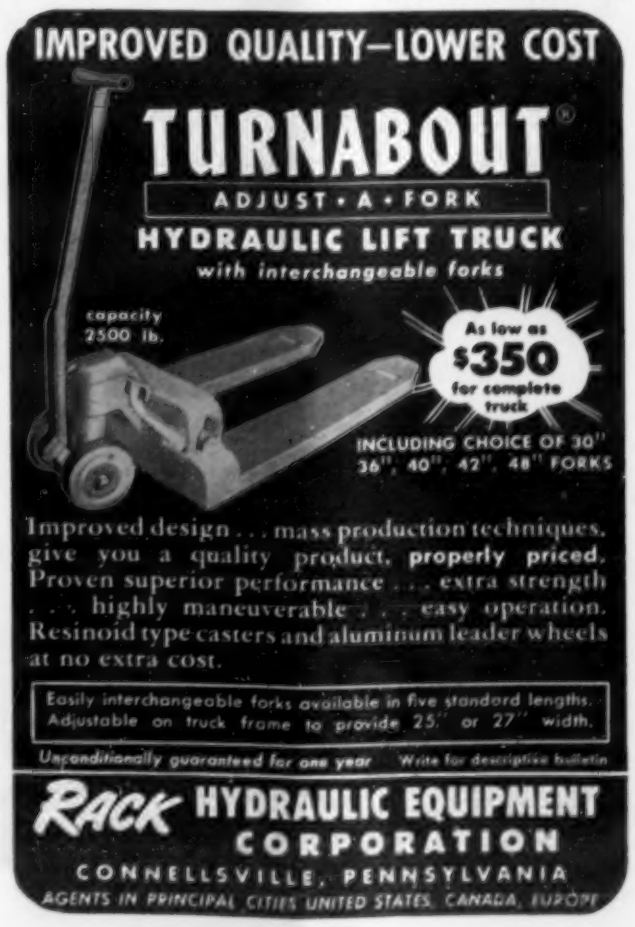
Bulletin A14

A sequence of ten precisely equal increments of ac. or dc. voltage or current are provided by this new Lin-A-Chek test instrument. It connects to a suitable power source and to the electrical instrument that requires checking. Then its control knob is set to each of its ten positions to obtain an accurate linearity calibration.

It can be employed on ac. or dc. voltmeters, dc. milliammeters, galvanometers, recorders. It measures the linearity of amplifiers, instrumentation circuits. It checks precision of scale selector on vacuum tube voltmeters and multi-range meters of constant input impedance.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4695



If you write maker identify as IEN - 4696

If you write maker identify as IEN - 4697

If you write maker identify as IEN - 4699

According to our customers, they continue buying Ledeen Cylinders because, "You people knock yourselves out to give us good service, and your cylinders perform better and last longer."

At Ledeen we perform no miracles, but we do give you quick delivery, good service, and, above all, a good sturdy, reliable cylinder.

Ledeen Cylinders are good cylinders.

Write for Bulletin 500.

VALVES • CYLINDERS
VALVE ACTUATORS
AIR-HYDRAULIC
PUMPS & BOOSTERS

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

If you write maker identify as IEN - 4700

HOW TO SAVE MONEY ON STEEL SHELVING

The real cost of shelving is the erected cost

That's why highest quality DeLuxe shelving costs you less. DeLuxe precision shelving has *fewer parts,* uses *80% less bolts* and is the *only shelving* available that is *100% adjustable.* It's quicker, less costly to install—easier to adjust.

Wherever you are, a DeLuxe factory representative is available to give you a complete engineering, planning and layout service without obligation.

Write for a free catalog now, while your mind is on shelving.

DELUXE METAL FURNITURE CO.
303 Struthers St., Warren, Pa.

DeLuxe

For over 25 Years Manufacturers of.
Storage Shelving • Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as IEN - 4701

NEW! TURBO BLAST CLEANING MACHINES

for washing, degreasing, stripping

Turbo-Blast combines violent agitation with solution detergency to quickly remove chips, cutting oils and drawing compounds from parts in production. Also cleans grease, oil, carbon and deposits from parts and assemblies being serviced. Saves up to TWO-THIRDS in cleaning time. Saves on chemicals — plant space and labor. Heated with steam, fuel oil, natural or manufactured gas with thermostat control for efficiency and economy. Performance facts available.

Sizes for all requirements from small portable units to specially designed systems of any size, conveyorized or batch types.

PROVED BY PERFORMANCE

Write for Catalog

STORM-VULCAN, INC.
2225 BURBANK DALLAS, TEXAS

Storm-Vulcan, Inc.
2225 Burbank St., Dallas, Texas
Send me Turbo-Blast Catalog.
Name_____
Company_____
Address_____
City_____ State_____

If you write maker identify as IEN - 4702

TESTING . . Precision capacitor calibrated for capacitance difference

Source: GENERAL RADIO CO.
275 Massachusetts Ave., Dept. IEN, Cambridge 39, Mass.

For laboratories

New instrument applies the substitution method of measurement and is calibrated in terms of capacitance difference rather than terminal capacitance. It is available in Type 722-MD to read the difference in a range from 0 to 1050 microfarads on one section and 0 to 105 microfarads on the other. A companion unit, Type 722-ME, has ranges from 0 to 105 and 0 to 10.5 microfarads.

Assembly is in a cast aluminum frame designed so all possible parts have the same temperature coefficient of linear expansion. A worm drive turns the rotor which is mounted in ball bearings. The worm is machined integral with its shaft. List price is $205 with low loss steatite stator insulation.

If you write maker identify as IEN - 4703

SOLDERING . . Combined solder and flux in stable paste form

Source: FARRELLOY COMPANY
1249 N. 26th St., Dept. IEN, Philadelphia 21, Pa.

No skill required

Hy-Tin is a new combination of flux and powdered solder in evenly distributed suspension in paste form. It cleans and tins in the same application on cast iron, stainless steel, Monel Metal, cast steel, copper, brass, galvanized iron, lead coated steel. It is stable and non-active at normal temperature. It turns liquid at soldering temperature. It will remove scale and tin black iron, can be applied on heated metal without sputtering.

It will not dry or cake when exposed to the atmosphere. It clings to a surface on which it is applied and so can be worked in horizontal or vertical position. It can be applied with steel wool, a damp cloth or a brush. Packaging is in 2-lb. cans listing at $4 each. One can provides coverage for 50 square feet of work surface.

If you write maker identify as IEN - 4704

Flexible action, to keep a sanding or grinding disc flat on a work surface while the driving tool rides at an angle, is provided by a new Oscillator element that has been developed by Flexentrik Corporation, 555 Fourth St., Dept. IEN, San Francisco 7, Calif. The element takes the shape of a metal cup a little under 3 in. in diameter. The cup is bonded upon rubber and carries two threaded hubs, separate from each other but within the rubber. One hub threads on the disc machine. The disc spindle threads into the other. The rubber provides the flexible action. The element is available in sizes to fit all standard motor shaft threads and in two types for general and light duty.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4705

Specify GM PRECISION-ENGINEERED

SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

ACTUAL SIZE

In the operation of—

- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibratio d altitud il able in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles.

Write today for complete information.

Another product of GM LABORATORIES • Inc.

4334 NORTH KNOX AVENUE, CHICAGO 31, ILLINOIS

If you write maker identify as IEN - 4706

WHAT IS YOUR TOUGHEST CLEANING JOB IN AIRCRAFT PRODUCTION?

This list shows where we are most frequently able to save time and money for our customers in aircraft production.

1. Cleaning aluminum, steel and magnesium
2. Stripping paint (solvent or hot tank)
3. Deoxidizing aluminum
4. Deflocculating paint in spray booths
5. Preparing metal for painting
6. Removing scale and corrosion
7. Preventing corrosion

FREE Our 48-page illustrated booklet *"How to Clean Metals in Aircraft Production"* describes all the cleaning jobs in the list. For your copy write Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

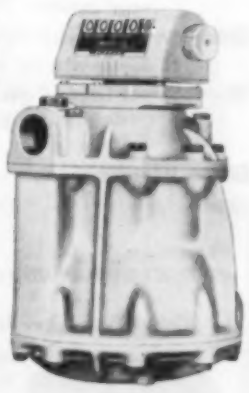
Technical Service Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 4707

the standard of accuracy . . .

BOWSER XACTO

. . . the World's most widely used meters!



For over a quarter century Xacto meters have brought to industry after industry an entirely new and effective way to measure liquids accurately and dependably.

•

Xacto meters accurately measure and safely handle more than 662 different liquids in processing, blending, packaging and many other operations.

•

There is no substitute for Bowser Xacto meters for checking incoming deliveries, transferring, batching or recording consumption.

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FORT WAYNE 2, INDIANA

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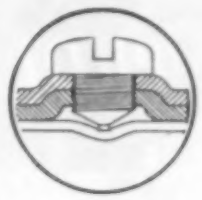
New York • San Francisco • Washington, D. C. • Hamilton, Ont.

If you write maker identify as IEN - 4709

VIBRATION PROOF!



COUPLING

CONNECTOR

E.M.T. FITTINGS

A screwdriver is all you need to install these simplified one-piece, pressed-steel fittings. Steel overlap at screw increases pressure — assures close, accurate fit—makes NE fittings vibration-proof! Sizes ½", ¾" and 1".

ASK FOR BULLETIN 581

National Electric PRODUCTS CORPORATION

140 Stanwix St., Pittsburgh 22, Pa.

If you write maker identify as IEN - 4710

▲ "Gold Medal" Extension Ladder and sturdy side rail type Ladder Jack support stage for fast, convenient window painting.

GOLD MEDAL LADDERS SCAFFOLDING

▲ "Gold Medal" Safety Extension Trestles support stages for interior painting

When it comes to getting men off the ground safely you'll do better for them (and for yourself) with "Gold Medal" equipment.

Next time you're buying, *compare* ... we'll be glad to show you why thousands of painting contractors insist on "Gold Medal" ladders and scaffolds . . . because they're made better to last longer and cut costs. And remember, you get the *right* equipment for *any* job because we have *all* types — made better to save you money.

- Ladders — Wood, Magnesium and Aluminum
- Scaffolds — Ladder, Rolling or Fixed in Steel and Aluminum
- Swinging Scaffolds — Light and Heavy Duty
- Trestles — Common, Extension and Adjustable Steel
- Stages
- Extension Planks
- Ladder Jacks
- Ladder and Scaffolding Accessories

Write today for free Bulletin L-71

Gold Medal Ladders Scaffolding — for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc.

38-21 12th Street, Dept. IEN • Long Island City 1, N. Y.

Branches in All Principal Cities

If you write maker identify as IEN - 4712

CONNECTOR . . Waterproof plug and receptacle to connect power line

Source: CANNON ELECTRIC CO.
3209 Humboldt St., Dept. IEN, Los Angeles 31, Calif.

Bulletin PR-GB1

Two contacts, made of silver plated copper alloy, rate 200 amp. for No. 0 cable in 110 to 440-volt service in this new power plug and receptacle. Identifying numbers are 20295-1 and 20296. Intended application is on mobile and stationary equipment.

Construction includes a steel cadmium plated shell and spring actuated snap covers to protect both the plug and the receptacle when the two are disconnected. The covers also provide a means for locking to prevent accidental disengagement. The cable entry is water tight and employs a screw tightened clamp. Rubber, employed with the steel shell, is designed for hard duty and is practically unbreakable. Plug length is about 4 inches. Receptacle length is about 3¼ inches. Average separating force for the two Size 0 contacts is about 10 pounds.

If you write maker identify as IEN - 4713

ADHESIVE . . Palletizing glue to hold cartons in an assembled load

Source: SWIFT & COMPANY
4200 Packers Ave., Dept. IEN, Chicago 9, Ill.

Trade named Palletite

Filled cartons that have been coated with this new moisture-resistant adhesive will remain in orderly piled assembly while they are being handled and transported from one location to another or while they are being put into or taken out of storage. The adhesive is applied with a brush or by glue rollers. It can be used on bags also that are to be stacked in stable piles. Several types are available to specification.

If you write maker identify as IEN - 4714

CLEANING . . Washing machine circulates solvent through spray head

Source: G & S MFG. COMPANY
2824 E. Washington St., Dept. IEN, Phoenix, Ariz.

About $50

Motor-driven pump, rating 200 gph., is mounted in the lid of a solvent container in this new machine. Above the pump, secured by four support straps and held by wing nuts on bolts in the lid, is a tank measuring 15 by 15 by 6 inches. The container holds 5 gal. of cleaning solvent. The pump delivers the solvent through a hose line and spray head over work positioned in the tank. Overflow returns from the tank to the container to be recirculated. The pump can be removed from the equipment and employed to circulate coolant at a machine.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4715

A TOUCH OF THE TOE keeps production stepped-up

5½" x 3¼" x 1¼" weighs only 1 lb.

LINEMASTER, JR. FOOT SWITCH

Ideal for women workers!

The hand that pulls the switch wastes time! Sensitive LINEMASTER, JR. Foot SWITCH keeps both hands at work—needs only tip-toe control. Your women workers, especially, will appreciate LINEMASTER, JR.'s instant response to the toe alone—heels remain comfortably on the floor, lessening fatigue and increasing production. Light-weight, streamlined aluminum housing with black crackle enamel finish.

Let us quote on your special switch requirements.

Write today for catalog and price list

LINEMASTER SWITCH CORP.

426 Woodstock Terrace Woodstock, Conn.

If you write maker identify as IEN - 4716

Electric HAND TACHOMETERS

Measure with Accuracy and Speed

ROTATIONAL and LINEAR SPEEDS

Designed for general shop and laboratory use to check motors, engines, turbines, machine tools, belts, etc. Measures speeds 0 to 1,000 and up to 25,000 RPM or 300 FPM and up. Indicator scale can be set for right or left hand use, and is calibrated to read within 2% of full scale.

Precision machining, sealed ball bearings, and the elimination of wearing parts assure constant accuracy. AC-Type generator requires no care.

Model T-103-A	0- 5,000 RPM	$42.50
Model T-103-B	0-15,000 RPM	$42.50
Model T-103-C	0-25,000 RPM	$42.50
Model T-103-D	0- 2,400 RPM & 800 FPM	$49.50

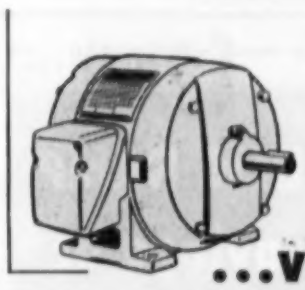
Special ranges calibrated to individual specifications

Write for FREE literature

The ELECTRO-MECHANO Co.

267 EAST ERIE STREET • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 4717



NEW GE TRI 55 CLAD MOTOR ...via Graybar

Here's the *all new* GE Tri-Clad "55" . . . and it's available via Graybar. A new insulation system . . . new bearing system . . . new ventilation system makes the Tri-Clad "55" a leader in modern motor design. Now available in 1, 1½ and 2 hp ratings—to order, just call your local Graybar Representative.

FREE 16-page booklet describes features

Send for your copy, today—see for yourself how the TRI-CLAD "55" offers you better performance, easier installation, less maintenance. Booklet also gives complete breakdown of new smaller motor dimensions. *Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.*

Call Graybar *first* for . . . Everything Electrical — Graybar Electric Company

422-124

If you write maker identify as IEN - 4718

Over 85% of the torque wrenches used in industry are

STURTEVANT TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch ounces ...inch pounds ...foot pounds
(All sizes from 0-6000 ft. lbs.)

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P. A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 4719

Now!

Bulletin brings you facts on new Fenwal Midget THERMOSWITCH® Control

Send for your free copy today!

Need accurate temperature control or detection within limited space requirements? Then the new Fenwal Midget THERMOSWITCH unit will be a welcome solution to your problem.

With a ¼" outside shell diameter, this compact unit contains the same outstanding advantages found in standard THERMOSWITCH controls. Has extremely high sensitivity and excellent control stability — its outer shell is the activating element. High resistance to shock and mechanical vibration are provided in the rigid construction. Wide temperature range from —50°F. to 450°F. Used for temperature control or detection in gases, solids, liquids.

Typical applications: antennas, airplanes, helicopters, electronic equipment, computers, process control equipment, reciprocating engines, molding presses or platens.

For complete information on this unusual new Fenwal unit, send now for your free copy of the Midget THERMOSWITCH control bulletin! Write **Fenwal Incorporated, 74 Pleasant Street, Ashland, Mass.**

Fenwal

THERMOSWITCH®

Electric Temperature Control and Detection Devices

SENSITIVE...*but only to heat*

If you write maker identify as IEN - 4720

New HYDRAULIC RAMP makes big savings at your loading docks

Moving Up or Down, the Leva-Dock Ramp keeps on the level with the truck or trailer bed. It compensates 4 ways for varying truck bed heights, out-of-level trucks, spring deflection.

Faster Handling • Less Breakage • Greater Safety

Power trucks move in and out of trucks and trailers faster, in safety, on the LEVA-DOCK RAMP. This hinged, self-leveling ramp positioned by an hydraulic jack fits into your loading dock and becomes part of the dock floor when not in use.

The LEVA-DOCK RAMP eliminates use of steel plates, bridge ramps or slow and expensive methods. Supports 20,000 lb. load in operating position. New automatic safety device prevents accidents and delays.

6 New Models—Lower Prices—Economical operation is by *self-contained electric power unit or compressed air.* Simple to install. Hundreds of dependable Rotary LEVA-DOCK RAMPS now in use are effecting substantial savings in loading costs.

Rotary

LEVA-DOCK RAMP®

Mail coupon for complete data and prices

Rotary Lift Co.,
1148 Kentucky,
Memphis 2, Tenn.

Send information on new LEVA-DOCK RAMPS to:

Name.....

Address.....

If you write maker identify as IEN - 4722

CLEANING . . Fire safe equipment for small pieces and sub-assemblies

Source: PROTECTOSEAL COMPANY
1920 S. Western Ave., Dept. IEN, Chicago 8, Ill.

Portable design

A work basket is moved up and down in cleaning solvent, held in the rectangular housing of this new washing machine, by an air-operated motor. Speed of the basket movement can be adjusted between 75 and 125 cycles per min. by setting a control valve. The unit will operate satisfactorily at air pressure between 25 and 100 pounds.

The housing is welded and equipped with a hinged lid and a fusible link. The link releases the lid to close in the event of fire. The washer is designed to mount at a machine so work can be cleaned as it is produced from the machine.

If you write maker identify as IEN - 4723

LIGHTING . . Fluorescent starters, push button and automatic reset types

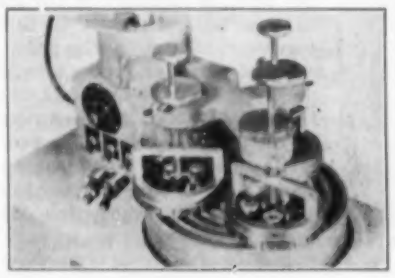
Source: LUSTRA CORP. OF AMERICA
36 Washington St., Dept. IEN, Brooklyn 1, N. Y.

Bulletin 1-159

Gold-Tone trade names two new fluorescent lamp starters enclosed in anodized cans for protection against corrosion. Both operate automatically to cut out defective lamps. A button on one is depressed to start a new lamp, after replacement has been made. The other resets automatically upon lamp replacement. Each starter is dated and guaranteed for two years of burning service. Replacements are issued, without charge, for any unit that becomes inoperative prior to expiration of the guarantee date.

If you write maker identify as IEN - 4724

New tooling has been developed by Crane Packing Co., 1800 Cuyler Ave., Dept. IEN, Chicago 13, Ill., to apply its Lapmaster lapping machine to finishing shoulder faces on shafts. The tooling includes a lap plate with a series of annular grooves, cylindrical brass work holders, adjustable roller guides with ball bearing races that permit the work to rotate in its own orbit on the lap plate. The company will suggest tooling for your shoulder work on receipt of sketches or blueprints.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4725

with VIBROTEST

TESTING your motors and other electrical equipment with Vibrotest not only saves hard manual labor; but also assures you of accurate readings at the touch of a button. Vibrotests are fully portable, rugged, and thoroughly dependable. Numerous Vibrotest Models to choose from—many with volts and ohms ranges in addition to megohm ranges. Act now to get easier, better, faster insulation resistance testing.

- **Push-button operation**
- **No Cranking**
- **No Leveling**
- **Instant Action**

Write for Bulletin 2A

ASSOCIATED RESEARCH, *Incorporated*
Precision Instruments Since 1936

3762 West Belmont Avenue, Chicago 18, Illinois

If you write maker identify as IEN - 4726

PILOT LIGHTS

Protect valuable equipment with JOHNSON pilot lights . . .

Used as indicators, inexpensive pilot lights can protect your equipment from further damage should circuit failures occur. Available in a wide variety of types, JOHNSON panel indicators include continuous indication neon types, and models for high and low voltage incandescent bulbs. Standard or wide angle glass and lucite jewels available in clear, red, green, amber, blue, or opal lenses. Variations from standards, including those meeting military specifications, are available in production quantities.

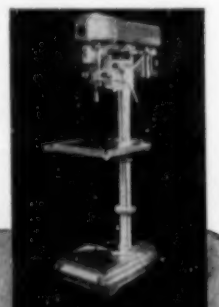
For further information write for pilot light catalog

E. F. JOHNSON COMPANY

309 2nd Ave. S.W. • Waseca, Minnesota.

If you write maker identify as IEN - 4727

walker-Turner



20" Drill Presses — Hand or Power Feed — are available in Bench, Floor or Multiple Spindle Models.

LIGHT-HEAVYWEIGHT PERFORMANCE WINS NEW RECOGNITION

The word is getting around about the past performance of Walker-Turner LIGHT-HEAVYWEIGHTS. A newly completed check of leading industries reveals this pertinent fact: *of the 250 largest manufacturers, no less than 93% right now are Walker-Turner users.*

They find in LIGHT-HEAVYWEIGHTS the features and engineering usually available only in large and costly equipment. Take this Walker-Turner 20" Drill Press, for example. It has a heavy, one-piece cast iron head; a 10-spline spindle 1" in diameter; and 4 heavy-duty, precision ball bearings—to name just a few of its fine features that make for top quality...at far from top price.

There's much more to Walker-Turner's LIGHT-HEAVYWEIGHT story that our factory-trained Distributor in your area would like to tell you. You'll find him an expert on industrial equipment, a good man to know. And he's as near as your phone. So why not call him, or write us for his name and more information—today!

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

DRILL PRESSES — Hand and Power Feed • RADIAL DRILLS • Wood and Metal Cutting BAND SAWS • TILTING ARBOR SAWS • RADIAL SAWS • JIG SAWS • LATHES • SPINDLE SHAPERS • JOINTERS • BELT AND DISC SURFACERS • FLEXIBLE SHAFT MACHINES

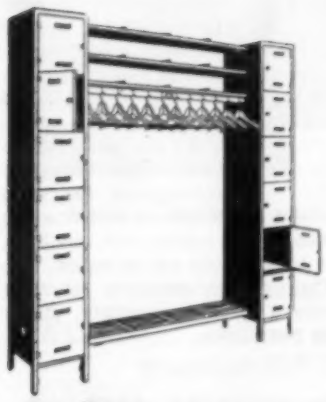
If you write maker identify as IEN - 4729

VALET RACKS

Lockerette

KEEPS WRAPS "in press"

improves health and morale — lowers absenteeism



Wraps are exposed to air and light. Employees do not face the weather in damp wraps that have been crumpled in dark lockers — do not eat soggy lunches, soaked by wet hats or gloves. Each person has his own spaced coat hanger, ventilated hat shelf and 12" x 12" x 15" deep lock box for lunches, tools and personal effects. Lockerettes save space too . . . the No. 6-12 (illustrated) accommodates 12 people in 6 feet; the No. 9-18 (3-pedestal) accommodates 18 in 9 feet.

Write for Bulletin OL-5

VOGEL-PETERSON CO.
1121 West 37th St. • Chicago 9, Ill.

If you write maker identify as IEN - 4730

For Trouble-Free Pipe Threading ...its a 65R

RIDGID

This 65R Threads 1" to 2" pipe with 1 set of dies . . . and it won't jam!

You won't find a die stock to equal this popular 65R—anywhere! It saves time—one set of self-contained high-speed dies adjust to 1", 1¼", 1½" or 2" pipe or conduit in 10 seconds! Mistake-proof self-centering work-holder sets to size instantly! It saves trouble —lead screw won't jam, it kicks out automatically when standard length thread is cut. Clean perfect threads, *fast!* For trouble-free extra-easy pipe threading buy 65R at your Supply House.

THE RIDGE TOOL COMPANY · ELYRIA, OHIO, U.S.A.

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 4732

COMMUNICATING . . Telephones and switchboard with "memory" action

Source: STROMBERG-CARLSON CO.
100 Carlson Road, Dept. IEN, Rochester 3, N. Y.

Technical data in Bulletin S-100

Dial-X designates new dial type telephones and sectional switchboard for telephone communication between plant departments and offices. The switchboard is self-contained in a steel cabinet measuring 50 in. in height by 22 in. in width by 17 in. in depth. It can be wall or floor mounted and weighs about 150 pounds. The equipment is available in 20 and 40-line capacities.

Initial installations can be made of two or more telephones. Each line can include six extensions. Additional lines, to the capacity of the board, can be added by sliding selector plates in and plugging them into their sockets. Wire from the telephones to the board is connected to three terminals by means of a screwdriver. Operation is on the unit's own power supply which plugs into a 110-volt 60-cycle ac. power source.

When a dialed circuit rings "busy" the user need only to hang up and wait. The "memory" mechanism completes the delayed call as soon as the busy line becomes available. An additional feature, known as the "Executive Right of Way," permits a key executive to preempt any line even though it may be busy when he makes his call. He dials the number he wants and presses a button. A warning signal is then sounded on the busy line and shortly thereafter the executive is connected so he can talk and listen.

Any number of individuals can confer by dialing a "conference call." Those who should take part in the conference are then on the one line. Connection can be made to a regular paging or sound system so anyone with a Dial-X telephone on his desk can broadcast a message or make an announcement after dialing the "paging line."

Several designs of telephone instrument are included in the line. One mounts on a desk and is convertible for wall mounting. Another mounts on the side of a desk or a wall. The equipment is available for rent or purchase.

If you write maker identify as IEN - 4733

TESTING . . Pulling machine checks vacuum tube base fit in socket

Source: SIZE CONTROL CO.
2500 W. Washington Blvd., Dept. IEN, Chicago 12, Ill.

"Grip" Tester

Interchangeable gages, simulating vacuum tube bases or tube sockets, apply on the table of this new pulling machine to check the amount of pull required to disconnect the tube and socket. Range is to 100 pounds. Pulling effort is applied by turning one or the other of two hand wheels connecting by gear and rack to the pulling head. In effect, the scale "weighs" the amount of pull. The equipment lists at $875. Special attachments are available at additional cost.

If you write maker identify as IEN - 4734

VALVE . . Solenoid operated, three way, provides for quick exhaust

Source: SKINNER ELECTRIC VALVE DIVISION
95 Edgewood Ave., Dept. IEN, New Britain, Conn.

50 to 150 pounds

Type V5-3 is a new three-way normally closed solenoid operated valve for use on small pneumatic and hydraulic cylinders. It includes a quick exhaust orifice for use in pneumatic equipment and adds also a secondary exhaust orifice at the top of the housing. This orifice connects into the main exhaust orifice from the top of the housing when the valve is employed in hydraulic service.

Two connection sizes are ⅛ and ¼ inch. Four inlet orifice diameters range from ⅛ to 3/64 inch. Secondary exhaust diameter is 3/32 in. in all cases. Diameter is 1⅝ inches. Overall height is 4½ inches. Electrical characteristics are subject to specification. Construction includes stainless steel parts, soft synthetic plunger insert, positive spring loaded action.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4735

Tough! Flexible! Fire Resistant!

U. S. ROYAL CORDS AND CABLES

For light, power and control applications, United States Rubber Company offers a complete line of electrical conductors, power cables, flexible cords, flexible power cables, signal and communication cables.

For more information write the nearest U. S. Rubber Branch or the address below.

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 4736

Announcing

THE WORLD'S MOST COMPLETE LINE

NEW Starrett

HIGH PRECISION — LOW FRICTION

DIAL INDICATORS

(Patents Pending)

This *new* line of dial indicators combines improved design with all the dependable features of previous models, long known and accepted throughout industry. *140 models* meet every requirement with new design and outstanding new features to insure greater accuracy, sensitivity and repeatability; easier, faster reading; longer life and simplified maintenance.

These *new* Starrett Dial Indicators are available in *Regular* or *NONSHOCK* types, with balanced or continuous dials, jeweled or plain (inserted bronze) bearings, English or Metric graduations . . . in all four standard A.G.D. groups plus a complete series of *Long Range* models. Write for complete information. Address Dept. N.

Starrett — SINCE 1880 · WORLD'S GREATEST TOOLMAKERS — THE L. S. STARRETT COMPANY, Athol, Massachusetts, U. S. A. — Buy THROUGH YOUR INDUSTRIAL DISTRIBUTOR

VISIT STARRETT BOOTH 18 — A.S.T.E. SHOW

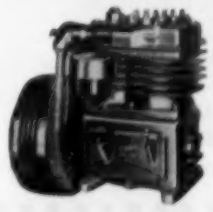
If you write maker identify as IEN - 4737

GET MORE PRODUCTION PER MAN HOUR

with the Help of Dependable Efficient

Curtis

Air Compressors

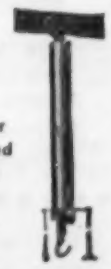


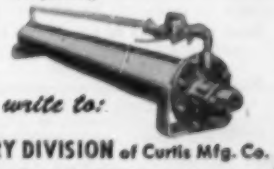
Available up to 320 cu. ft. Can be supplied base mounted up to 50 H.P. or tank mounted up to 15 H.P. Timken bearing equipped . . . precision built.

Air Cylinders and Hoists

To lift, lower, push, or pull

Pendant air hoist is ideal for lifting or lowering—Bracketed Air cylinder can be mounted in any position for lifting, lowering, pushing or pulling.





For more information write to:

CURTIS PNEUMATIC MACHINERY DIVISION of Curtis Mfg. Co.
1941 Kienlen Avenue • St. Louis 20, Missouri

764

100 Years of Successful Manufacturing Experience

If you write maker identify as IEN - 4738

Nugent Pressure Filter installed on turret lathe for filtering cutting compound.

NUGENT Cutting Oil and Coolant Filters provide 20 times more filtering area than other filters of comparable size. This means better filtering — and better filtering means a great savings in lubricants, longer tool life and fewer rejects.

Nugent pressure filters of this type are built in capacities from ¼ to 350 GPM for any machine that uses oil or cutting fluids.

Write for Complete Information

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS

Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities*

If you write maker identify as IEN - 4739

No other film packages tools, hardware and small parts as well as tough VISQUEEN® film

Here is how C. Hager and Sons Hinge Manufacturing Co. packages small items in tough VISQUEEN film for protection and display. VISQUEEN won't crack, split or run, even if punctured. Seals out moisture. Prevents rust.

Let a converter of VISQUEEN film help you package better. The coupon will bring names of those serving your area.

Important! VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. VISQUEEN film is produced by process of U.S. Patents No. 2461975 and 2632206. Only VISQUEEN has the benefit of research and technical experience of The VISKING Corporation, pioneers in the development of pure polyethylene film.

VisQueen® film . . . a product of

THE VISKING CORPORATION
World's largest producers of polyethylene sheeting and tubing
Plastics Division, Terre Haute, Indiana
In Canada: Visking Limited, Lindsay, Ontario
In England: British VISQUEEN Limited, London

THE VISKING CORPORATION, BOX IE4-1410
Plastics Division, Terre Haute, Indiana

Send me names of converters of VISQUEEN film serving my area.

Name_____

Company_____

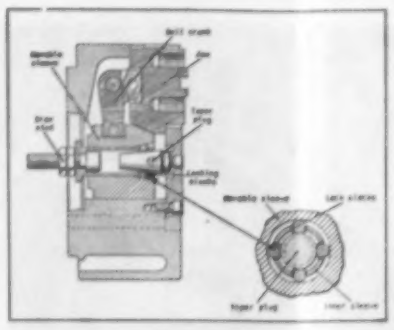
Address_____

City_____ Zone____ State____

If you write maker identify as IEN - 4741

CHUCK . . Draw bar operated, locks against loosening in action

Source: LOGANSPORT MACHINE CO.
913 Center Ave., Dept. IEN, Logansport, Ind.



Patent 2617657

Positive movement of the draw stud is required to release pressure between a work piece and the jaws in this new PRO chuck. It will remain in closed position, against the action of centrifugal force or power failure, when a hydraulic or pneumatic cylinder is employed to operate the draw stud. The new construction is available on any of the standard sizes in the company's draw bar operated chuck line.

Bell cranks connect the chuck jaws which ride in radial ways in the chuck body and the movable sleeve that surrounds an inner sleeve and is connected to the draw stud. At the front of the inner sleeve is a set of locking blocks. They ride in holes in the sleeve and engage an internal taper on the movable sleeve. They also engage the outer surface of a taper plug that rides at the center of the assembly in stationary position.

The taper on the plug and the taper bore in the movable sleeve are calculated to produce a constant bearing on the blocks for the complete movement of the inner sleeve so closing action wedges them tightly in place and prevents the jaws from opening. As the chuck revolves, centrifugal action on the jaws causes the blocks to rock and build up additional locking effort on the work.

If you write maker identify as IEN - 4742

DOOR OPERATOR . . Motor driven opens and closes fire door for traffic

Source: CLARK DOOR CO.
515 Hunterdon St., Dept. IEN, Newark 8, N. J.

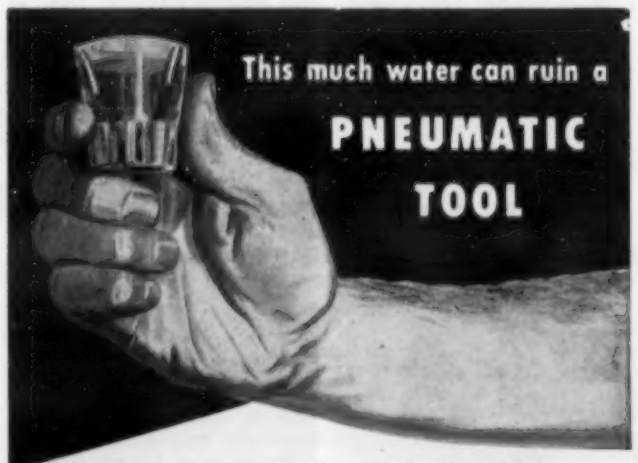
For doors to 8 feet

Fuse-O-Link designates new design of the company's Prest-O-Matic motor-driven door operator for application on doors riding inclined tracks and normally intended for fire protection. The operator connects to the door through a fusible link set for a release temperature slightly lower than that of the standard fire door link so the fire door can be opened and closed to permit traffic independent of its original duty in protecting against fire.

In the event of fire the operating link melts and transfers operation of the door to the link-controlled gravity action on the inclined track. Operating control can be specified for pull cord, push button, floor plate or photoelectric cell. An instant reverse safety device is available to reverse the travel movement if the door should be closed upon an obstruction.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4743



Just a small amount of water in the air lines of your plant can rust out and ruin your pneumatic tools. Want to stop this tremendous waste? Install Hi-eF Purifiers on the air lines at each pneumatically-operated unit. Removes 99% of water and dirt. No messy filters or moving parts to replace. Cost less than $20.

THE V. D. ANDERSON COMPANY
1966 West 96th Street • Cleveland 2, Ohio

FREE–Valuable book of money saving ideas for plants with air lines.

ANDERSON Hi-eF PURIFIERS

Hi-eF PURIFIERS
KEEP DIRT AND MOISTURE OUT OF AIR LINES

If you write maker identify as IEN - 4744

MARKING . . Self-adhesive labels provide heat resistance to 400 deg. F.

Source: NORTH SHORE NAMEPLATE CO.
43-01 Bell Blvd., Dept. IEN, Bayside, N. Y.

Standard and to order

Hi-Temp designates a new line of self-adhesive marking labels for application on products such as selenium rectifiers, electric motors, transformers, circuits subject to temperature to 400 deg. F. The labels are mounted on cards. They are available in the same number throughout for each card or in sequence numbers. Solid and sequence combination letters and numbers, mixed combination letters and numbers, solid letter cards and sequence letter cards are included. The labels strip from the card. The pressure sensitive adhesive clings to a surface without regard to cold, humidity, vibration or heat in the surrounding conditions.

If you write maker identify as IEN - 4745

CLEANING . . Detergent powder for instruments, laboratory equipment

Source: ALCONOX INCORPORATED
51 Cornelison Ave., Dept. IEN, Jersey City 4, N. J.

Technical data upon request

Alconox is a liquid detergent that has been on the market for some time for institution and hospital use. It is now generally available to clean glassware, instruments, porcelain, metal and plastic surfaces. It penetrates to bring out dirt and foreign matter. A spoonful of the powder makes a gallon of active solution. Packaging is in 3-lb. boxes to 300-lb. barrels.

If you write maker identify as IEN - 4746

PRESS TOOLS . . Die cushion air operated, 10 to 24 in. cylinder

Source: DAYTON ROGERS MFG. CO.
2828 13th Ave., Dept. IEN, Minneapolis 7, Minn.

Available to order

New sizes, measuring 10 to 24 in. in cylinder bore, have been added to the company's Model-H universal pneumatic die cushion. The unit develops a ring holding pressure of ½ to 45 ton on 100-lb. air line pressure in the single cylinder design. The cushion is intended for installations involving limited press bed opening.

Construction is in steel with provision for internal guiding to compensate for off-center loading. The hardened steel pressure pad is made to fit a specified press bed opening. An adjustable stop is included to limit movement of the pressure pad to any desired position in the "up" cycle.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4747

Great Motors from Great Britain!

Newman Totally Enclosed Fan Cooled Squirrel Cage Motors

- world-famous NEWMAN MOTORS
- net savings up to 40%
- immediate delivery
- unconditionally guaranteed
- superior design— to N.E.M.A. standards
- offices in principal cities

For the first time, the complete world-famous line (2 million installed in 62 countries since 1935) of NEWMAN MOTORS, built to N.E.M.A. standards, is offered to the American Market in sizes up to 250 H.P.

These are new, high-quality motors equipped with the prestige of a great motor-making company. Vast savings, dependability, unconditional guarantee are offered to American buyers.

Any motor sent free and without obligation for examination and testing. Factory stocks at New York, Chicago, Savannah, Houston, Portland, San Francisco and Los Angeles.

Write for a catalog and price list to-day

Newman INDUSTRIES (AMERICA) INC.

If you write maker identify as IEN - 4748

CONTROL . . Panel boards for assembly of specified instruments

Source: FERGUSON EQUIPMENT CORP.
Penn. Ave. & 21st St., Dept. IEN, Pittsburgh 22, Pa.

Ferguson Unitline

Illustrated is a typical unit in the company's new custom-built line of panel boards. The assembly includes interlocking door switches so electric service must be turned off to permit access to the interior. Relays and other apparatus in the interior are mounted on removable frames that pull out for inspection. The panel can be assembled against a wall since the wiring and other components are readily accessible. Size, construction and arrangement are to specification.

If you write maker identify as IEN - 4749

WELDING . . AC arc machine, transformer design for utility duty

Source: MARQUETTE MFG. CO.
307 E. Hennepin Ave., Dept. IEN, Minneapolis 14, Minn.

About $170

Six plug connections are provided on the housing front of this new Redi-Arc machine for current output between 30 and 130 amperes. A ground lead connection also is located on the front. The machine operates on 220-volt 60-cycle single-phase input. It rates 3 kva. Controls assist in striking an arc so the machine can be handled by inexperienced workers. Welding, ground and connection leads and a helmet are standard equipment.

If you write maker identify as IEN - 4750

FURNITURE . . Portable stand for assembly, inspection, maintenance

Source: STANDARD PRESSED STEEL CO.
Box 732, Dept. IEN, Jenkintown, Pa.

Hallowell Unit

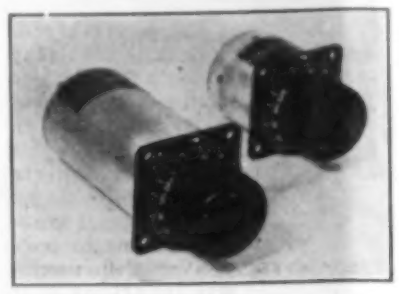
Model 426 is a new assembly of steel work top, drawers and door enclosed compartment of the company's steel furniture components, previously described IEN-9580-52. Overall dimensions, 18 by 24 by 35¼ in., are the same as the previously developed No. 422 and No. 424 stands. The compartment is 14 in. in height. Each of the drawers measures 5 in. and can be locked. Finish is in baked green enamel. The unit is shipped knocked down ready for assembly by the user.

All Makers of These and All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4752

TIMING . . Sequence devices for equipment actuation and control

Source: ABRAMS INSTRUMENT CORP.
606 E. Shiawassee St., Dept. IEN, Lansing, Mich.



Details upon request

Intervalometer, to the left in the illustration, and Count Limiter to the right, are new devices for equipment actuation and control. They were initially developed for aircraft use and now are offered for general application. The Intervalometer supplies a 28-volt dc. 3-amp. inductive pulse of 0.25 sec. duration at regular time intervals. The interval between pulses is adjusted by turning a dial at the end of the housing. Repeat accuracy is within 10 milliseconds on an input range of 24 to 29-volt dc. Provision is made to start and stop the device from a remote position. Each unit is provided with two interchangeable time interval scales providing, in all, four ranges to 12, 24, 60 and 120 sec. in 0.1, 0.2, 0.5 and 1 sec. increments respectively.

The Count Limiter applies with the Intervalometer as a pulse counter and limiter to stop the Intervalometer at the desired number of impulses, from 1 to 120, as set on its dial. Two Count Limiters can be connected together to provide control to a maximum of 14,400 pulses. Any number of both devices can be interconnected to provide an infinite variety of preset pulse programs. Assembly is in a 2¼-in. panel opening. Weights are 22 and 14 ounces.

If you write maker identify as IEN - 4753

MUFFLER . . Discharge silencer for air, gas, steam exhausts

Source: BURGESS-MANNING COMPANY
749 Park Ave., Dept. IEN, Libertyville, Ill.

Bulletin 265

Exhaust noise from equipment, discharging air, gas, steam at high velocity, is muffled by this new Series ADS Acoustic Discharge Silencer. It is available in three models for use in critical areas, semi-residential, and non-critical areas. Each model is available in 12 sizes. The unit for application in critical areas measures 24 to 66 in. in diameter by 78 to 316 in. in overall length. Inlet and outlet are 8 to 30 inches. The assembly for non-critical industrial areas measures 22 to 66 in. in diameter, 48 to 172 in. in overall length and 8 to 30 in. in inlet and outlet diameter.

Construction is in pressed or rolled steel with welded assembly. Flanges are also welded in place. Drains are provided to permit installation in any position. Each assembly receives a shop coat of protective paint prior to shipment. Silencing is accomplished by the combined action of sound absorbing material, acoustic reactance chambers and the company's patented snubbing principle. Both high and low frequency noises are muffled.

All Makers of These and All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4755

SAVE TIME • STEPS • MATERIALS with the ONE HAND HANSEN TACKER

ENGINEERED FOR SERVICE

FASTER! With its zip-zip compound leverage action, Hansen saves time in all types of tacking and fastening. Fast, easy one-hand operation. Tacks fast as you grip. Leaves one hand free.

BETTER! Balanced design insures accurate, precision driving. Powerful action drives each staple firmly and neatly in place for improved quality and increased holding power. It is adaptable to a wide variety of uses — screens, insulation, TV wires, etc.

AT LESS COST! Hansen saves *time, steps and materials* — operates faster — saves back-tracking — ready for instant, continual use.

USE ONLY GENUINE HANSEN STAPLES IN THE BLUE BOX — *for faster, smoother tacking and better performance!* Staples in 80 sizes. Tackers in 36 models.

A. L. HANSEN MFG. CO. Request Booklet ...TODAY
5051 RAVENSWOOD AVE. • CHICAGO 40, ILL.

If you write maker identify as IEN - 4756

NEW Schrader Pressure Regulators *for fastest response, highest capacity*

Maximum capacity with minimum pressure drop, plus almost immediate response to changing loads are features of the new Schrader Air Pressure Regulators.

These new models are light in weight—the body is die-cast aluminum—and will give long, trouble-free service, since all working parts are of corrosion-resisting materials. Available either with or without a self-bleed feature.

These new Schrader Regulators are available in five sizes: ¼, ⅜, ½, ¾ and 1 N.P.T., and can be installed for right-to-left or left-to-right flow. Gauge ports are provided on either side for easy readability in any position. Standard range is 5-150 psi.

For details on this new regulator, ask for Bulletin A-251.

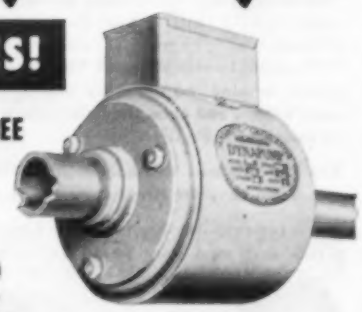
A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Avenue, Dept. D-45, Brooklyn 38, N. Y.

If you write maker identify as IEN - 4751

Give your product these

Dynapump

ADVANTAGES!



- **MAINTENANCE FREE** *No lubrication*
- **LEAKPROOF** *No shaft seal or stuffing box*
- **EASILY INSTALLED** *Compact, light, may be mounted in any position*
- **CORROSION FREE** *Stainless steel*
- **LOW FIRST COST**

Magnetic Fostoria Pumps

Ad No. 5404

The revolutionary DYNAPUMP is a magnetically driven fractional horsepower centrifugal pump that eliminates 90% of pump difficulties. It is suitable for pumping water, solvents, refrigerants, corrosive or hazardous fluids, beverages, etc. Write for descriptive folder.

THE FOSTORIA PRESSED STEEL CORP., Fostoria, Ohio
"Our 38th Year of Quality Products" Dept. 407

If you write maker identify as IEN - 4754

MEYERCORD *Nameplate* DECALS *Laboratory Engineered* FOR EVERY SURFACE AND FINISH

Meyercord Decal Engineers and Designers Can Help You Lick that Tough Problem

If you want to ADVERTISE . . . INSTRUCT . . . or IDENTIFY on any surface from smooth, non-porous plastics to rough, pebbly materials, Meyercord engineers will come up with the answer in a hurry. We dipped into our recent orders and highlight below a few "case histories" where Meyercord Decals have been engineered for extremely difficult conditions:

AIRCRAFT INDUSTRY—Meyercord engineers developed a special identification decal for jet aircraft capable of withstanding temperatures to 900° as well as the effects of aeromatic fuels and hydraulic fluids.

ELECTRONICS INDUSTRY—A leading electronics manufacturer required a schematic diagram which could be folded compactly and placed inside communication sets. Meyercord solved the problem with a special decal applied to nylon fabric under heat and pressure.

HOME APPLIANCES—Meyercord engineers developed a new type of open-letter decal providing high color and dramatic effect—at less than one third the cost of discarded metal name plates.

MEYERCORD DECAL NAMEPLATE MANUAL and Full Information FREE

Meyercord "Mark-it" Manual shows hundreds of uses for durable, washable, decal nameplates . . . as trade marks, instructions, charts or diagrams . . . This manual is FREE . . . but request it on company letterhead, please.

THE MEYERCORD CO. *World's Largest Decalcomania Manufacturers*
DEPT. S-315 5323 WEST LAKE ST. CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 4757

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for DEHYDRATING

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique Centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 2658

DRYING and CONCENTRATING CO.
333 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 4758

A TRUE DEODORANT LIQUID SOAP

Balmaseptic

CONTAINS THE G-11 BRAND OF HEXACHLOROPHENE

ANTISEPTIC — Reduces skin bacterial count as much as 95%!

- Thorough cleansing and deodorizing action insures long-lasting freshness;
- Carefully aged, does not irritate the skin, reduces danger of infection;
- Ideal for hand-washing and shower use;
- BALMASEPTIC is *stable*—stores well and without loss of clarity, fragrance or dispensing properties.

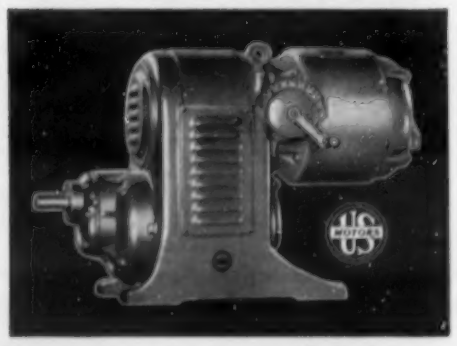
Write for literature, and see your DOLGE SERVICE MAN
Dispensing Equipment Available

FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

Dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 4759

THOUSANDS OF PLANTS NOW GETTING THOUSANDS OF SPEEDS



Miracle Motor

ANY RPM BY DIAL CONTROL

Get more production out of your present machines by powering them with U.S. Varidrive motors. No extra space required. Thousands of plants are profiting with this miracle motor. Turning a simple control handle changes speed of the Varidrive to any desired r.p.m. in ratios up to 10:1. Operators can instantly select the speed best suited for the work.

ALL-IN-ONE PACKAGE

Occupies little more space than a single speed motor. ¼ to 50 hp, 2 to 10,000 r.p.m.

U.S. VARIDRIVE

Mail Coupon for 16-pg. Booklet

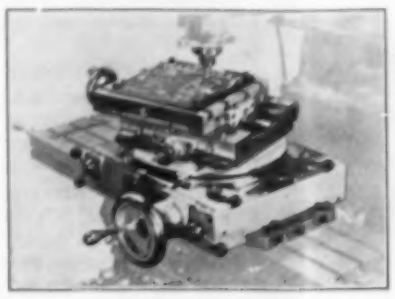
REQUEST FOR VARIDRIVE BOOKLET

U. S. ELECTRICAL MOTORS Inc. IEN-4
Box 2058, Los Angeles 54, Calif. or Milford, Conn.
NAME
COMPANY
ADDRESS
CITY ZONE STATE

If you write maker identify as IEN - 4761

INDEXING . . Tool and die table to position work on a machine

Source: ADVANCE PRODUCTS
Dept. IEN, Benton Harbor, Mich.



Bulletin, "Die Table"

The assembly of this new indexing table includes two carriages operating at 90 deg. with each other on a rotating base. The complete unit clamps to the table of a metal working machine to position work in successive locations so it need not be moved after it has been secured initially to the 11 by 11-in. top cross slide.

The slides can be adjusted to position the work to cut any radius whose center point lies within an 8-in. square area centered on the table, all from one set-up. Stops are provided so standard gage blocks can be employed where extreme precision is required. Radii can be any size within the limits of the machine table movement.

The rotating portion of the table is turned by operating a worm shaft hand wheel, the collar of which is graduated in minutes. This worm shaft can be disengaged so the table can be turned freely for initial work location. Then it can be re-engaged for final adjustment. A brake and lock hold the table rigid and eliminate backlash in climb cutting.

Rotational stops are provided to clamp at any point on the circular portion of the assembly. Contact is with a stop block that swings out of the way when it is not needed. Feed screws and worm are hardened and ground. Rotating members operate on Timken bearings. The base is sealed against entrance of foreign matter and so the internal parts can operate in oil. Overall dimensions are 20½ by 18¾ by 9 inches. Weight is about 325 pounds.

If you write maker identify as IEN - 4762

LUBRICATING . . Spray equipment blows coolant through several nozzles

Source: AIR CONVERSION RESEARCH CORP.
4107 N. Damen Ave., Dept. IEN, Chicago 18, Ill.

Lubricates, cools

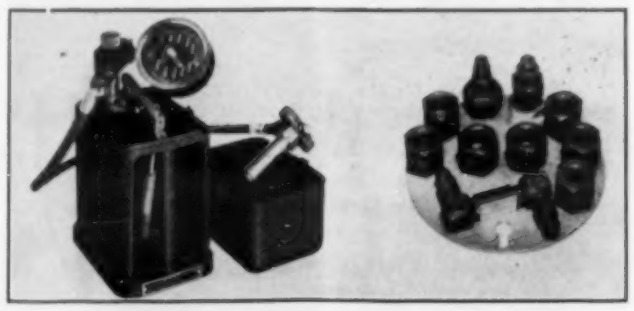
Liquid coolant, supplied by the company in concentrated form, is diluted with water for application, in this new Lo-Jet Acro spray equipment, to lubricate single-point metal working tools and to absorb heat resulting from friction between the tools and the work. The new unit centralizes the controls, connects to a shop source for air pressure and delivers through one or more tube lines to nozzles that can be adjusted independently for a fine mist or a solid stream of fluid.

Air enters through a filter and moves from there to an injector which picks up the coolant from the storage tank in the housing. Delivery is to an adjusting head at the top of the housing and from there through tubes to the individual nozzles. The housing is equipped with a pedestal for independent mounting and to permit moving the complete unit from one machine to another. A gage shows the coolant remaining in the reservoir. A basic assembly with a 1-gal. tank lists at $115. Assembly with a 6-gal. tank is about $183.

If you write maker identify as IEN - 4763

TESTING . . Hand hydraulic pump to pressure test hydraulic mechanisms

Source: KIENE DIESEL ACCESSORIES INC.
10352 Pacific Ave., Dept. IEN, Franklin Park, Ill.



Details in Bulletin KTP-50

Fuel or hydraulic oil is delivered from a 2½-pt. reservoir, in the housing of this new Type KPT-50 pump, by operating a hand lever located inside the open portion of the housing. The operator can brace the heel of his hand against a bar across the opening to this recess and then pull the operating handle toward him to develop test pressure to 6,000 lb. on the standard unit and to 9,000 lb. on the heavy-duty design. A hydraulic gage reads the developed pressure. A set of fittings is provided to make connections of various types to diesel engines and to hydraulic equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4764

THE INSIDE STORY TO EFFICIENT DUST COLLECTING WITH A CYCLONE SEPARATOR BY

TORIT

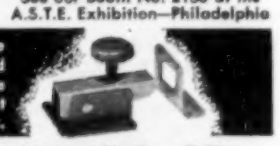
Here's a cut-away view of a cyclone type Torit Dust Collector. Dust laden air spins downward with centrifugal action forcing nearly all the dust to drop into the bottom reservoir. What little escapes moves up the center to be exhausted, either outside or to an after-filter bag.

Cyclone type Torit Dust Collectors trap up to 95% of the dusts . . . even lints from rag buffing wheels. To this efficiency you can add other savings . . . a minimum of piping to reduce friction losses and running times that coincide with the work being done.

Torit Dust Collectors in cyclone or cabinet types can solve your dust problems, protect working conditions and employees' health. For complete information write:

See our Booth No. 2158 at the A.S.T.E. Exhibition—Philadelphia

TORIT DOOR FASTENERS . . . The sturdy and efficient door fastener used on Torit cabinets is available for use on your products. Strike plate either flat or angular. Write for quantity prices.



TORIT MANUFACTURING CO.
286 WALNUT STREET ST. PAUL 2, MINN.

If you write maker identify as IEN - 4765

FOR SAFETY *Interlock!*

PROTECT MEN AND EQUIPMENT AGAINST "MENTAL LAPSE".

Operator is shown entering compartment which is interlocked with protective equipment. Diagram shows key interchange scheme.

KIRK KEY INTERLOCK *System*

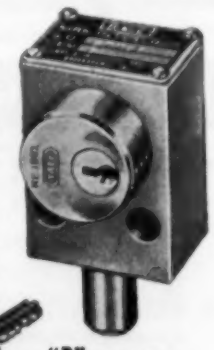
Provides a predetermined sequence of operation . . . and prevents "mental lapse" which might cause damage to men and equipment.

A Typical application is shown above. "A" is interlocked with "B" to prevent opening of door "A" when switch (locked by "B") is closed and in service. Only when protective switch (with "B" interlock) is opened, and locked open with a Kirk Key can the same key be released to unlock "A" (on door).

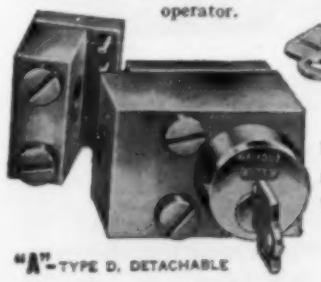
This makes sure that circuits in compartment with "A" interlock are dead and safe to approach. The main switch locked by "B" cannot be reclosed until "A" is locked closed, making the same key available to unlock "B", and thus allow the switch to be closed in again.

The key can now be removed from "B", indicating that the circuits are energized.

When removed, the key is usually kept on a rack and used only by an authorized operator.



"B"-TYPE F FLAT MOUNTING



"A"-TYPE D, DETACHABLE

Unlimited interlocking schemes may be arranged from many types of Kirk Key Interlocks

Write for Bulletin 1700 for many more details.

R&IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO.
GREENSBURG, PA.

If you write maker identify as IEN-4767

SAUEREISEN NO. 82

AN EXCELLENT GENERAL PURPOSE WATER-PROOF GLUE!

Sauereisen No. 82 is a rubber base adhesive with high strength, resistance to water, gasoline, oil. It is easy to handle. Adheres to practically all surfaces: metal, glass, wood, etc. Apply by brush or machine. Bonds cork, linoleum, fabric or felt to metal—canvas to Masonite—Neoprene and rubber to themselves or metal, etc.

RECOMMENDED FOR USE ON:

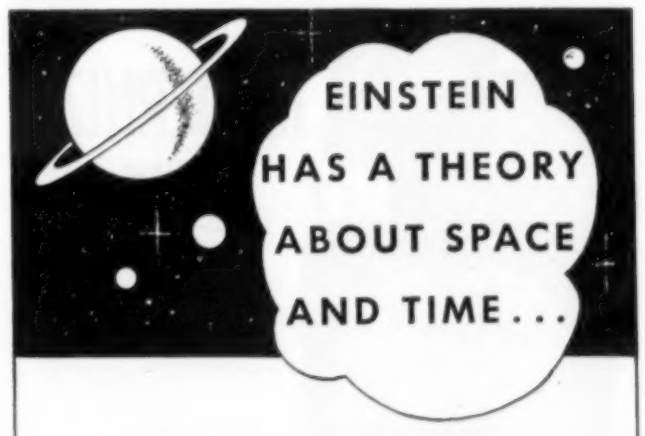
Canvas	Gaskets	Rubber
Cardboard	Linoleum	Weatherstripping
Celluloid	Metal	Wood
Cork	Paper	
Fabric	Plastics	
Felt	Plywood	

SPECIAL TRIAL ORDER 1 GAL. $6.25

FREE "CATALOG OF USES" WITH EACH TRIAL ORDER! SEND TODAY . . . DEPT. IEN:

SAUEREISEN CEMENTS COMPANY
PITTSBURGH 15, PENNSYLVANIA

If you write maker identify as IEN-4768

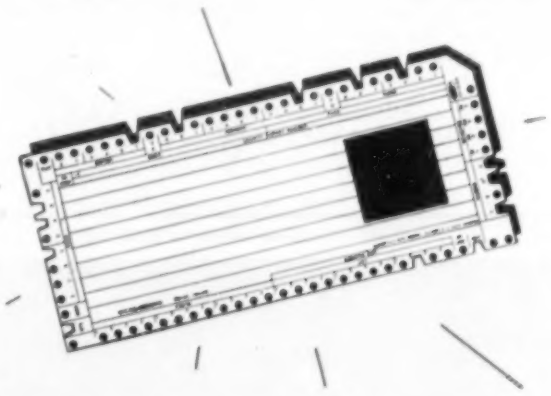


. . . AND SO HAVE WE!

We think space and time mean money — and we know you can save both with

FILMSORT·KEYSORT

FILMSORT, Inc. Pearl River, N. Y. — McBee Company Athens, Ohio



We convinced Spicer Manufacturing Company, and they microfilmed their 85,000 engineering drawings and filed them in Filmsort Aperture cards, marginally punched by McBee-Keysort for quick and accurate sorting.

For reference, Spicer uses the Filmsort Surveyor, bringing their drawings back to full size on its giant 24 x 36" screen.

There is a place in your organization for a Filmsort-Keysort application. Let us explain our theory of time and space to you —

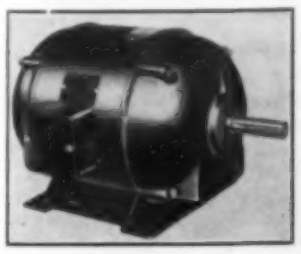
FREE!!! Let us explain our theory to you. Write for booklet "New Horizons"

FILMSORT Inc.
DEPT. I
Pearl River New York

If you write maker identify as IEN-4770

MOTOR . . Squirrel cage induction in standard NEMA frame, ½ to 125 hp.

Source: ELECTRIC PRODUCTS CO.
1725 Clarkstone Road, Dept. IEN, Cleveland 12, Ohio



Bulletin 37-205

Illustrated is drip proof protected design in the company's new line of heavy-duty protected induction motors. Included in the line are totally enclosed fan cooled, totally enclosed fan cooled explosion proof, and totally enclosed non-ventilated explosion proof designs.

Each motor in the line is protected against damaging condensation and damp environment. It is finished to prevent corrosion and deterioration of the insulation and to keep the interior clean. Standard design includes sealed ball bearings, cast iron terminal boxes with gasketed covers and with gasketed connection to the motor frame.

Insulation is placed between each coil. The coil ends are tied and the stator receives a dip and bake finish. The rotor is sprayed with a rust inhibitor. Cadmium plated fans are employed on the small sizes with aluminum fans on the larger ones. Each rotor is balanced for smooth operation.

If you write maker identify as IEN-4771

TESTING . . Liquid die and developer to reveal surface flaws in metal parts

Source: MAGNAFLUX CORPORATION
7300 W. Lawrence Ave., Dept. IEN, Chicago 31, Ill.

Technical data upon request

Zyglo-Pentrex trade names a new development in the company's fluorescent penetrants to disclose surface flaws and cracks in metal work pieces. A separate emulsifier is applied by a second dip so both emulsification time and washing can be controlled to suit given work and none of the penetrant will be washed out.

If you write maker identify as IEN-4772

COUNTING . . Electronic instrument counts pulses to 1,000,000 per second

Source: BERKELEY SCIENTIFIC DIVISION
2200 Wright Ave., Dept. IEN, Richmond, Calif.

Also for timing

Model 5510 is a new universal electronic counter. It will measure and indicate time intervals from 3 microseconds to 1,000,000 sec., holding accuracy within 1 microsecond. It will measure and indicate frequencies to 1 megacycle with maximum accuracy within 1 cycle. It operates as a straight-forward electric counter to 1,000,000 cycles per second.

Assembly is on a standard relay rack panel measuring 19 by 8¾ inches. It mounts Model 705AF and 707AF decimal counting units to provide binary coded output information for data reduction applications. The instrument employs dc. coupled channels scanning to any multiple of 1 or 10 seconds. It provides automatic operation with display from 0.2 to 5 sec. and manual operation with infinite display. List price of this new counter is $1,100.

If you write maker identify as IEN-4773

SWITCH . . Lever operated, quick make and break for limit duty

Source: SQUARE D COMPANY
4041 N. Richards St., Dept. IEN, Milwaukee 12, Wis.

Bulletin SM239

Class 9007 Type T is a new limit switch for machine application. It can be set with a screw driver for 11 contact operating sequences. It can be equipped with a variety of operating lever arms to mount in any angular position. Overtravel is about 80 deg. in either direction. Seven types of base plate, in addition to threaded holes in the side of the die cast housing, permit mounting in a variety of positions.

The switch is supplied in basic units to include the housing and mechanism, the interchangeable bases and the lever arm. These parts can be held in minimum stock for assembly to meet given requirements. Rating of the silver contacts is 25 amp. on 110-volt ac., 15 amp. on 600-volt ac. in single-pole double-throw arrangement. It is 15 amp. on 110 to 600-volt ac. in three-point double-throw assembly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4774

SHELDON CHICAGO U.S.A.

OFTEN PAYS OUT ON THE FIRST JOB...

and gives additional years of "cost free" service.

In the past, lathes were generally bought as large and as heavy as possible to insure accuracy and sufficient power. Now, with accurate, low-cost Sheldon Precision lathes, it is more profitable to buy these faster, cost-cutting lathes for the specific job at hand just as you would buy jigs and fixtures.

In savings of tooling costs, operator cost, power cost, and plant loading, as well as extra profits from more pieces per hour. Sheldon lathes often pay back their cost on a single run.

Sheldon lathes will work to the closest tolerances — have "Zero Precision" Taper Roller Bearings. They can take a healthy cut when operating at high speed direct drive—have double V-belts to the spindle. They will swing 10", 11" or 13" and have a 1⅝" hole through the spindle — have sufficient capacity for the great bulk of lathe work. Sheldon lathes have created a new factor for figuring machinery costs. They are tools you should know about.

Write for Catalog

SHELDON MACHINE CO., INC.

Booths 810-12 ASTE Show Philadelphia

4208 N. Knox Avevenue, Chicago 41, Illinois

If you write maker identify as IEN-4775

ask your tool crib supervisor

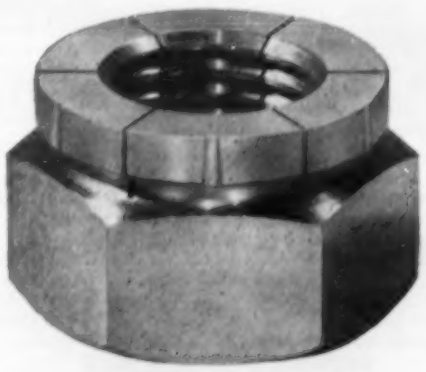
Chances are your tool crib foreman will tell you CP Air Impact Wrenches are asked for the most. The CP-360 for example, is designed for fast, low-cost nut running in production line and maintenance. CP Air Impact Wrenches are supplied from ¼ to 1¾ inch bolt size in straight and angle head models with side, pistol grip or straight handles. *Chicago Pneumatic Tool Co., 8 East 44th St., New York 17, N. Y.*

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN-4776

they're ONE piece, ALL metal...



no parts to work loose or get lost

Because they are one piece—nothing to assemble, come apart, lose or forget—FLEXLOC locknuts save production time. Because they are all metal, they lock and stay tight at higher temperatures. See your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

FLEXLOC LOCKNUT DIVISION

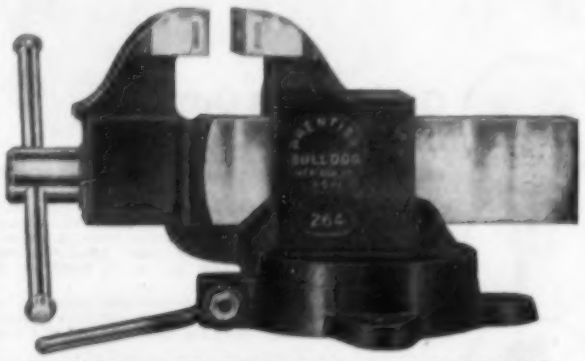
sps JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 4777

PRENTISS

"BULL DOG" VISES

Backed by 86 years of time-proven acceptance by industry.



MACHINISTS — TOP SWIVEL JAM — COMBINATION PIPE
HINGE PIPE — WOODCUTTERS — UTILITY

Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features that give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

Your Industrial Distributor can supply you

PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

If you write maker identify as IEN - 4778

NOW Constant Tension From Start To Finish In Winding Roll-Fed Material

Never Before Anything So Efficient · Simple · Versatile

This is your chance to obtain a higher quality of wound material than ever before—and to save substantially on operating and maintenance costs at the same time.

You've never seen anything like the Hobbs "Alquist" Winder. It's in a class by itself. No other winding device can match it for simplicity, efficiency and flexibility.

OPERATES ON A. C.

Here is a squirrel cage three-phase A. C. motor, flange mounted to a gear reducer. You connect it *directly* to your rewind shaft. It is entirely independent of the main machine drive. You plug it into your present three-phase power outlet—no transformers or converters to bother with. Then you set a knob to the desired tension and walk away.

AUTOMATICALLY SENSES TORQUE

From the start to the very finish of your rewind operation, the "Alquist" constantly and accurately maintains the desired tension—protects even the most delicate materials from stretching, breaking or contracting. Automatically the "Alquist" senses the increase in torque as the roll diameter builds up and it slows down the speed of the shaft in direct proportion. Constant tension can be maintained in a roll build-up of as high as 10 to 1.

ECONOMICAL, FLEXIBLE

Power utilization of the "Alquist" is as high as 80%, approximately four times greater than other types of winders. This means important savings in energy. Maintenance is as slight as with any normal A. C. motor—there are no brushes or tubes to contend with. The "Alquist" is compact, saves you floor space. It is clean, there are no belts to slip and stir up dirt. It is flexible—connect it directly to the rewind shaft, or remotely by chain and sprockets. And it needs no supervision, saves you labor costs.

PROVED PERFORMANCE

The "Alquist" already has been proved in winding textiles, rubber, foil, cable, wire, plastics, paper—materials of almost any type or weight. And it can be adapted to meet any production requirement.

Find out for yourself just why the Hobbs "Alquist" Winder can make such a big difference—how it can give you increased production through *positive* quality control. Mail coupon below for free information. No obligation.

HOBBS MANUFACTURING CO.
40 Salisbury St., Worcester 5, Mass.
EST. 1903

Kindly send complete information on the new Hobbs "Alquist" Winder.

Name _____ Title _____
Company _____
Street _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 4780

ELEVATOR . . Hydraulic table rates 2 ton, provides 36-in. lift

Source: REVOLVATOR COMPANY
8706 Tonnelle Ave., Dept. IEN, North Bergen, N. J.

Can be moved

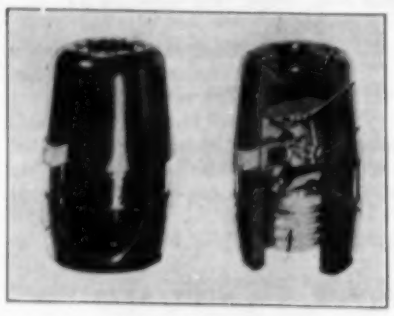
The frame and operating cylinder of this new hydraulic table are similar in design to the frame and cylinder employed on the company's line of portable elevators. The construction permits installation on a floor, without downward projections, to provide for a lift movement starting at 2¾ in. above the floor line. The platform in this particular assembly measures 64 in. in width by 44 in. in length. The structure back of the platform adds 10 in. to the length. Other sizes and capacities can be specified.

Power is supplied by a motor-driven hydraulic unit that the company is prepared to supply for hose connection to the power cylinder. The power unit shown in the illustration is motor driven and measures 14 by 10 by 24 inches. It can be located in any convenient position.

If you write maker identify as IEN - 4781

LIGHTING . . Plastic socket with push button or lever type switch

Source: McGILL MFG. CO.
100 N. Lafayette St., Dept. IEN, Valparaiso, Ind.



Bulletin S-54

Series 4300 is a new design of electric socket employing a molded phenolic-plastic barrel shaped housing made in two parts. These parts enclose the operating mechanism and the lamp base screw shell. They thread together, at about the center of the assembly, to make a tight moisture proof connection. The socket employs the Levolier switch mechanism. There is space, back of the mechanism, to permit tying an Underwriters' knot in the electric cord.

If you write maker identify as IEN - 4782

TESTING . . DC amplifier steps up low dc. voltage or current

Source: FIELDEN INSTRUMENT DIVISION
2920 N. 4th St., Dept. IEN, Philadelphia 33, Pa.

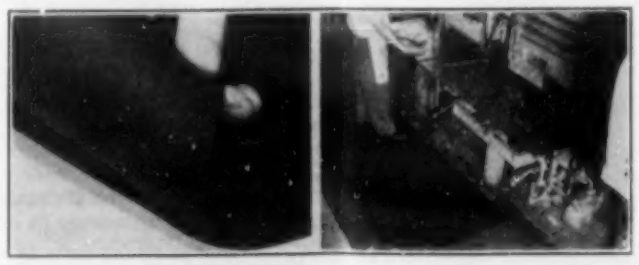
Details upon request

Series 80 designates a new null balance amplifier. It is shown in the illustration in connection with a thermocouple. The new unit converts low level dc. microampere or millivolt input to high level dc. current output suitable for indicating, recording and controlling operations. Input impedance is negligible when the input is current. List price is $150 for single input, $175 for a triple-input unit. Range is from 5 microvolts to 20 microamp. full scale. Output of the new amplifier is 5 millamp. full scale.

If you write maker identify as IEN - 4783

FLOOR . . Rubber matting for those who must stand at their work

Source: UNITED STATES RUBBER CO.
1230 Sixth Ave., Dept. IEN, New York 20, N. Y.



For use on dry hard floors

Foot-Ease is a new two-layer construction of sponge rubber protected by a tough rubber cover. It acts as a cushion on concrete, tile, steel floors. The mat is available in ribbed or pyramid surface. It is supplied in 25-ft. lengths and 3-ft. widths so it can be cut to fit a given area. It is not designed for use on wet or oily surfaces.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4784

- Class 3 Screws
- AN Drilled Fillister Heads
- AN WASHERS
- Studs, Standard & Special
- Special Screw Machine Products
- TITANIUM BOLTS Now Available Inquiries Invited

Star Stainless screws have
CLEAN, BRIGHT-AND-SHINY HEADS

Star STAINLESS SCREW CO.
ARmory 4-1240
212 Union Avenue • Paterson 2, N. J.
Direct New York Telephone: Wisconsin 7-9041

If you write maker identify as IEN - 4785

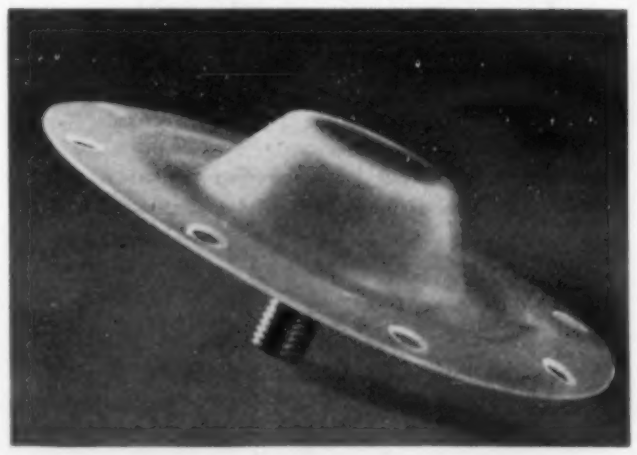
MODERNIZE WITH TRIPLETT METERS

A SIZE, TYPE, AND STYLE FOR EVERY INSTALLATION

Your instrumentation is strictly modern in design and construction with Triplett Meters. You can have sizes 2" to 7" in a wide variety of case shapes and mounting arrangements, A.C., D.C., R.F., Rectifier or Dynamometer. Molded and metal cases, rear illumination, and other special features are available. For precision and economy virtually every meter part is made in Triplett plants under rigid humidity and dust control. Every meter represents the refinements gained in half a century of meter experience. Keep *your* panels up-to-the-minute with Triplett Meters—famous the world over for quality, accuracy, and dependability.

Triplett Electrical Instrument Co.
Bluffton, Ohio, U.S.A.

If you write maker identify as IEN - 4786



DIAPHRAGMS

. . . for high strength in ultra-corrosive service. Excellent flexural and tensile properties—from minus 65°F to 300°F—and the chemical inertness of "Kel-F" polymer assure dependable operation of this aircraft pressure transducer. In this service they withstand 3,000 psi flexing in hydrogen peroxide.

Diaphragms—flat or formed—are fabricated to all specs from molded sheet, or precision-molded to requirements, with or without metallic inserts.

KEL-F

For names of nearest molders of these and other Kel-F parts write for descriptive "BUYERS GUIDE" . . . Chemical Manufacturing Div., The M. W. Kellogg Company, Danforth St., Jersey City 3, New Jersey.

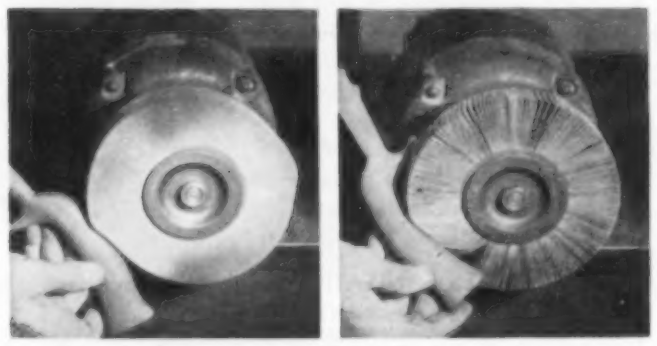
TRI-FLUORO-CHLORO-ETHYLENE POLYMERS

If you write maker identify as IEN - 4787

GRIND-O-FLEX

the new flexible

GRINDING WHEEL



- ★ Removes burrs, flash, tool marks from irregular surfaces
- ★ Will not "flat" or dig into contoured shapes
- ★ Finishes metals, plastics; satin finishes stainless steel
- ★ Requires no special equipment, attaches to power tools
- ★ Safe and easy to use, requires no skill or experience
- ★ Comes in a wide variety of aluminum-oxide grits
- ★ See your Industrial Supply Dealer or write for catalog

MERIT PRODUCTS, INC.
4023 Irving Place, Culver City, California

Manufacturers of SAND-O-FLEX and GRIND-O-FLEX abrasive tools

If you write maker identify as IEN - 4788

Reduce Lost Man Hours

"Kerodex" Gives New and Improved Barrier Protection Against Contact Dermatitis

"Kerodex" is a new and improved barrier cream which offers maximum protection against hundreds of primary irritants and sensitizing agents encountered in industry. It provides an effective protective coating which is invisible yet strong and as elastic as the skin itself. It protects against initial contact. It prevents the recurrence of a dermatitis after recovery.

Special Advantages

"Kerodex" offers practical and effective protection *before* the damage is done. It is nonirritating and nonsensitizing. It may be applied with equal safety to the face, hands or any other area of the skin, keeping pores and follicles free from foreign matter.

"Kerodex" does not smear. It does not affect materials handled, nor is it affected by them. It is easy to apply, economical and highly acceptable to the user.

"Kerodex" provides a vital safety measure for the maintenance of high production levels.

Maximum Protection

"Kerodex®" is supplied in two types, and a series of creams are available to protect against: *water-soluble* irritants such as acids, alkalis, soaps, detergents, and water-insoluble irritants such as paints, enamels, cleaning fluids.

Write for Information

We'll be happy to send you complete descriptive literature, or to have our representative call at your convenience.

Ayerst Laboratories, 22 East 40th Street, New York 16, N. Y.

If you write maker identify as IEN - 4790

LATHE . . Pedestal base machine swings 12 in., has variable speed drive

Source: LOGAN ENGINEERING CO.
4901 W. Lawrence Ave., Dept. IEN, Chicago 30, Ill.

Details upon request

Stepless speed adjustment is now available on the company's 12-in. lathe by turning a hand wheel on the front of the housing. The range is 38 to 295 rpm. with the head stock in back gear. It is 250 to 1,575 rpm. in direct drive. Changes can be made while the lathe is in operation.

The spindle is mounted in sealed precision ball bearings and carries a 1⅝-in. through hole. It is fitted with a 2¼-in. 8-pitch nose and a 6-in. drive plate. The carriage mounts cross and compound slides and is fitted with graduated dials on the screws, a threading dial and a lever operated disc clutch. The tool post takes a ⅝ by ¾-in. holder for ¼-in. tool bits.

Cross slide travel is 6¼ in. and compound travel is 2⅛ inches. Longitudinal feeds range from 0.0018 to 0.1000 in. per revolution of the spindle. Cross feed is one-quarter this rate. The lathe can be set to cut 48 thread pitches, right or left hand, between 4 and 224 per inch.

The tail stock takes a No. 2 Morse taper center and has 4 in. of spindle movement. It can be set over through 11/16 in. for taper turning.

If you write maker identify as IEN - 4791

LAYOUT . . Sensitized sheet to make diazo type plant layout prints

Source: REPRO-TEMPLETS INC.
River Rd. & Pennsylvania Av., Dept. IEN, Oakmont, Pa.

Sample sheet upon request

Prints are made with this new adhesive backed sensitized sheet in any ammonia vapor type of developing machine to produce a solid black line as well as a graded tone image from tracings, drawings, templets. The self-adhesive back of the sheet is covered with a protective paper that is peeled off after developing so the sheet can be mounted on a film grid or drawing to complete the layout reproduction. The sheet is particularly suited for plant layout templets or repeat details in engineering drawing, mapping, charting.

If you write maker identify as IEN - 4792

MAGNIFYING . . Illuminated lens with flash light batteries in handle

Source: E. W. PIKE & COMPANY
492 North Ave., Dept. IEN, Elizabeth, N. J.

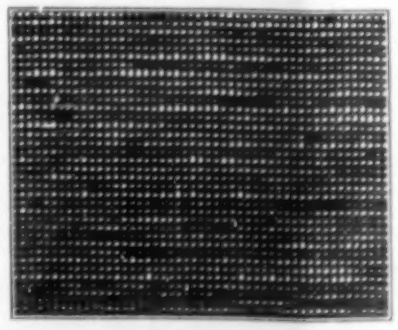
Various strengths

New design of the Flash-O-Lens Illuminated magnifier employs a lens housing made of heat resistant polystyrene plastic with a lens holding ring that can be removed or replaced without difficulty. The interior of the housing is finished in white to reflect light from the flash light lamp mounted at the end of the handle which also contains the flash light batteries. The magnifier is particularly for inspection work.

If you write maker identify as IEN - 4793

ABRASIVE . . Open mesh fabric is impregnated with silicon carbide

Source: CARBORUNDUM COMPANY
1942 Buffalo Ave., Dept. IEN, Niagara Falls, N. Y.



Sample upon request

Sand Screen is a new open mesh fabric that is impregnated on both sides with silicon carbide grain. The finished sheet presents an open mesh construction that permits sanding residue to flow freely through, in wet or dry operation, on either machine or hand sanding. The material is made in sheets, cut sheets, and discs in four grit sizes from 280 to 400. It is available also in 18-in. width in 50-yd. rolls and in discs measuring 8 or 8¾ inches in diameter.

Sheet size is 9 by 11 inches. This cuts to 3⅔ by 9 inches. The sheet can be creased and torn readily into any desired width. It can be used flat or folded. It is sharp on both faces.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4794

Strong – Sturdy

TRUSCON INDUSTRIAL STEEL DOORS

These strong durable units are practically indestructible. They are particularly adaptable for use in basements, rear entrances, boiler rooms, fire exits and similar locations in factories, hotels, apartments, schools, churches, shops, warehouses, filling stations and stores. Swing Type Doors are furnished with heavily reinforced pressed steel door frames, prepared for Truscon standard door hardware.

Truscon Swing Type Steel Doors

Stiles and rails are made of pressed steel tubing with continuous lock seam. All corners are carefully fitted, substantially reinforced, and welded solidly. The large size of the 16 gauge tube, 1¾" x 3", provides approximately 14" of continuous welding around the perimeter — thus insuring permanent rigidity and complete elimination of sagging.

Swing doors may be equipped with either lever latch or cylinder lock hardware. Slide doors have hasp and staple hardware.

Truscon Slide Type Steel Doors

FREE BOOK!

Illustrated literature gives complete details and specifications on Truscon Industrial Steel Doors. Write for it.

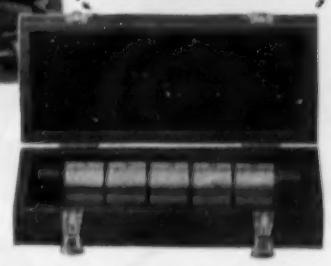
TRUSCON STEEL DIVISION
REPUBLIC STEEL
1094 ALBERT STREET • YOUNGSTOWN 1, OHIO
Export Department: Chrysler Building, New York 17, New York

If you write maker identify as IEN - 4795

Check Surface Roughness Waviness and Lay INSTANTLY

. . . *Right At The Machine*

With ACME'S ROUGHNESS COMPARISON SPECIMENS



Consists of various surface specimens, *individually finished* to definite micro-inch readings, grouped together in one handy comparison bar. Merely hold bar opposite work for fast, visual comparison check of surface roughness, waviness and lay.

Available in groups of 3, 5 and 8 specimens. Low cost. Write for details, now!

Mfr's. of Drill Jig & Fixture Bushings

ACME INDUSTRIAL COMPANY

215 N. Laflin St. Chicago 7, Illinois

THE SERVICE SHOP TO INDUSTRY FOR OVER A QUARTER CENTURY

If you write maker identify as IEN - 4796

42 STOCK SIZES

HALLOWELL®
SOLID STEEL COLLARS

now size-marked for easy identification

Your HALLOWELL distributor now stocks these *size-marked* precision machined solid steel collars in sizes to fit shafts from 3/8" to 3" inclusive. And positive positioning of every HALLOWELL Collar is assured by the famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose. Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

HALLOWELL POWER TRANSMISSION DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 4797

HOW TO
SAVE MONEY WITH
GRC SMALL DIE CASTINGS

It tells how to: design for GRC small die castings, cast intricate shapes, and involved contours, simplify design, make 1-pc integral castings in place of multiple assemblies, eliminate machining operations. Contains technical data and information for designers and engineers, case histories, and other valuable facts.

GRIES REPRODUCER CORP.
World's Foremost Producer of Small Die Castings
139 Beechwood Ave., New Rochelle, N. Y. • NEw Rochelle 3-8600

If you write maker identify as IEN - 4798

How to get
MORE
PRODUCTION
MINUTES
per hour!

Don't walk—TALK with Executone Intercom!

No need to waste time shuffling back and forth for information and instructions. Just push a button and *talk!* Walking time becomes *production* time. With Executone roving employees are located instantly...telephone lines are kept open for outside calls...more work gets done *faster!* Thousands of installations prove that Executone cuts costs and increases production—*pays for itself many times over!*

Executone
INTERCOM AND VOICE PAGING SYSTEMS
Service on your premises by factory trained technicians

Get the Facts! EXECUTONE, INC., Dept. D-8
415 Lexington Ave., New York 17, N. Y.
Without obligation, send booklet describing how Executone helps cut costs. I am particularly interested in:
☐ Plant-office communication ☐ Switchboard relief
☐ Locating personnel ☐ Penetrating high noise levels
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Firm_____
Address_____ City_____

In Canada—331 Bartlett Ave., Toronto

If you write maker identify as IEN - 4800

THREADING . . Tapping head rates threads to 1 in. in mild steel

Source: PROCUNIER SAFETY CHUCK CO.
18 S. Clinton St., Dept. IEN, Chicago 6, Ill.

For production

Spline drive from the clutch to the tap holder, a new double cone friction clutch, helical gearing, ball and needle bearings feature the construction of this new Tap King head. The friction clutch provides smooth direct and reverse drive engagement, the latter at twice the forward speed. Assembly weight is 18 pounds.

Outside diameter is about 5¾ inches. Distance from the bottom of the drilling machine spindle to the bottom of the tap holder is 10½ inches. The tap holder shown in the illustration is the company's new Tru-Grip design. The tap is held in alignment by its round shank and is driven by the square end.

If you write maker identify as IEN - 4801

BATTERY . . Lead acid design for locomotives and industrial trucks

Source: CHICAGO FORGING & MFG. CO.
1317 W. North Ave., Dept. IEN, Chicago 22, Ill.

Varley Bulletin upon request

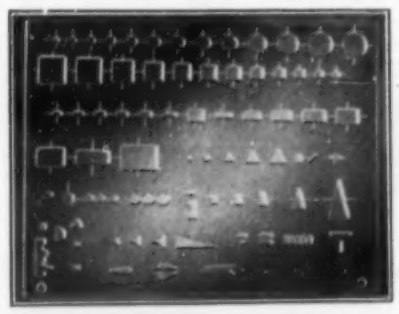
Varley VIS, with 12½-in. plates, and VIL, with 16-in. plates, are new lead-acid storage batteries designed particularly for industrial use. Both batteries employ plates extending to the bottom of the battery assembly, since no space is required into which spent material can shed. Patented separators prevent shedding and electrolyte splash. They fill the space between the active plates and form a cushion support.

The separators are made of diatomaceous silica combined with a bonding material. They are sufficiently absorbent to hold all of the electrolyte that is needed for the battery action. The vibration-proof cushioned design will operate efficiently even though the housing has been cracked or when the battery is tipped over. Plates per cell range from 9 to 29. Both batteries are available in wood trays or in steel cases with lifting lugs. Arrangement of cells and connections can be specified for all sizes and types of electric powered trucks.

If you write maker identify as IEN - 4802

DRAFTING . . Symbol template for equipment on electric power line

Source: RAPIDESIGN INCORPORATED
Box 592, Dept. IEN, Glendale, Calif.



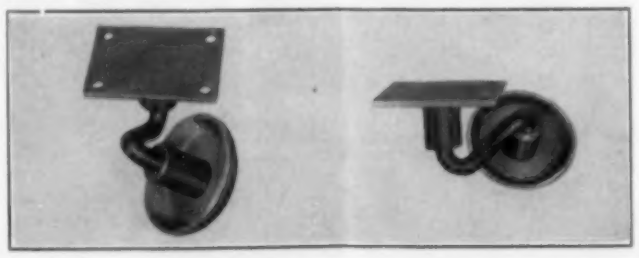
List price is $5

Template 62 has been added to the company's line of drafting templates. It was designed originally for the Bureau of Reclamation. It contains fundamental symbols to portray component parts or elements of equipment that carry an electric load from the source of power to the consumer. Combinations can be made to show complete electrical devices. The template is 0.06-in. transparent plastic. The cut-outs are milled. Center lines are scribed on the bottom to eliminate parallax error. Dimensions are 7⅝ by 5⅝ inches.

If you write maker identify as IEN - 4803

CASTER . . Saucer type swivel unit moves easily over a rough floor surface

Source: ROLAWHEEL COMPANY
1757 W. Grand Ave., Dept. IEN, Chicago 22, Ill.



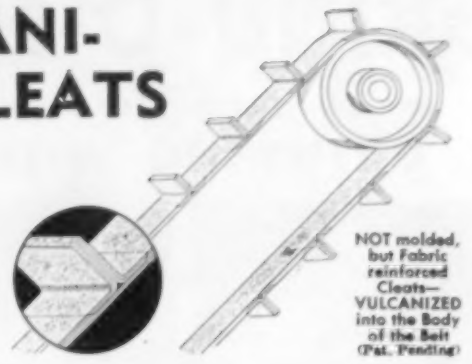
Technical data upon request

Climbing ability, to come up out of a depression in a floor or to ride over obstructions, characterizes the action of this new caster. It is available in standard 1½ and 2½-in. wheel diameters with load capacity to 1,000 and to 1,600 pounds. The curved axle and the dual ball bearing sockets provide for free movement from any starting position. The caster will not pick up lint. It is alloy steel with rust resistant finish.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4804

SANI-CLEATS



Solves your Cleated Belt problems with 47 types of belting to handle a variety of products.

PROMOTES SANITATION as there are no gaps or crevices. No bolts — rivets or metal.

Highly flexible SANI-CLEATS can bend parallel to belt. Can be made stiff or flexible as desired.

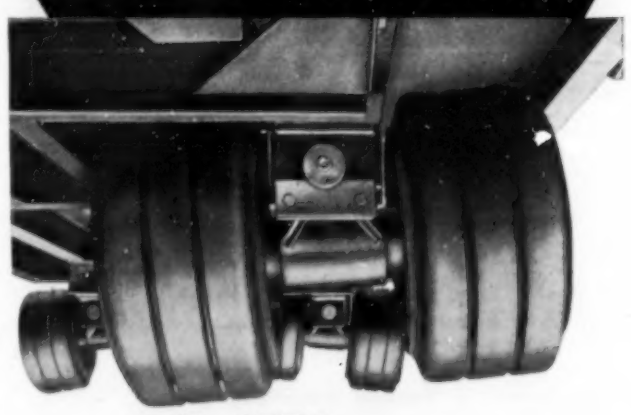
Any Height, Width & Spacing with SANI-CLEATS

WRITE FOR LITERATURE

A. J. SPARKS & COMPANY
863 Grandville Ave., S. W.
Grand Rapids, Michigan

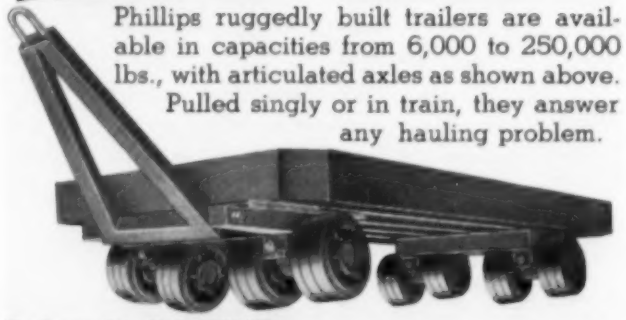
If you write maker identify as IEN - 4805

ARTICULATED AXLES
Carry Heavy Loads
SAFELY
OVER ROUGH TERRAIN

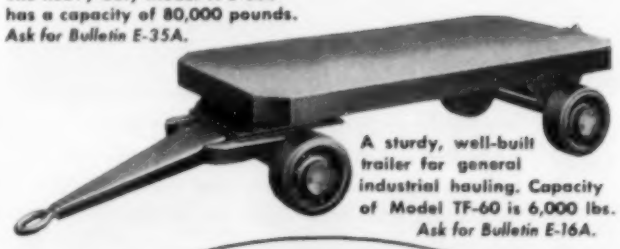


Phillips
Industrial **TRAILERS**

Phillips ruggedly built trailers are available in capacities from 6,000 to 250,000 lbs., with articulated axles as shown above. Pulled singly or in train, they answer any hauling problem.



The heavy-duty Model TFU-800 has a capacity of 80,000 pounds. *Ask for Bulletin E-35A.*

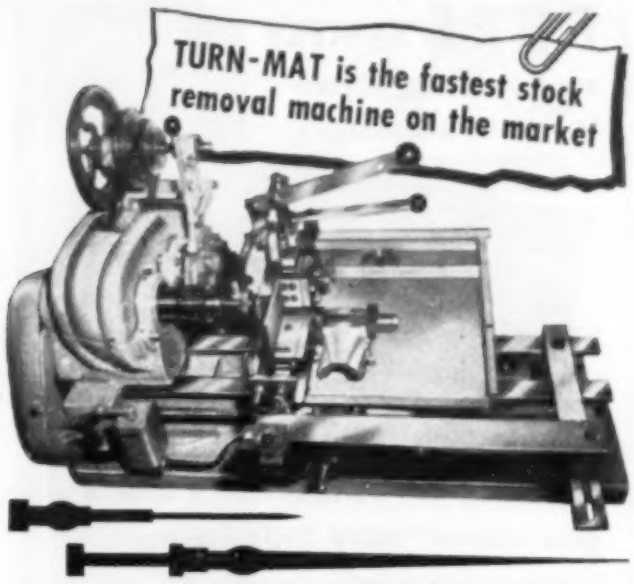


A sturdy, well-built trailer for general industrial hauling. Capacity of Model TF-60 is 6,000 lbs. *Ask for Bulletin E-16A.*

PHILLIPS
MINE AND MILL SUPPLY COMPANY
2300 JANE STREET
PITTSBURGH 3, PA.

Manufacturers for 90 Years

If you write maker identify as IEN - 4807



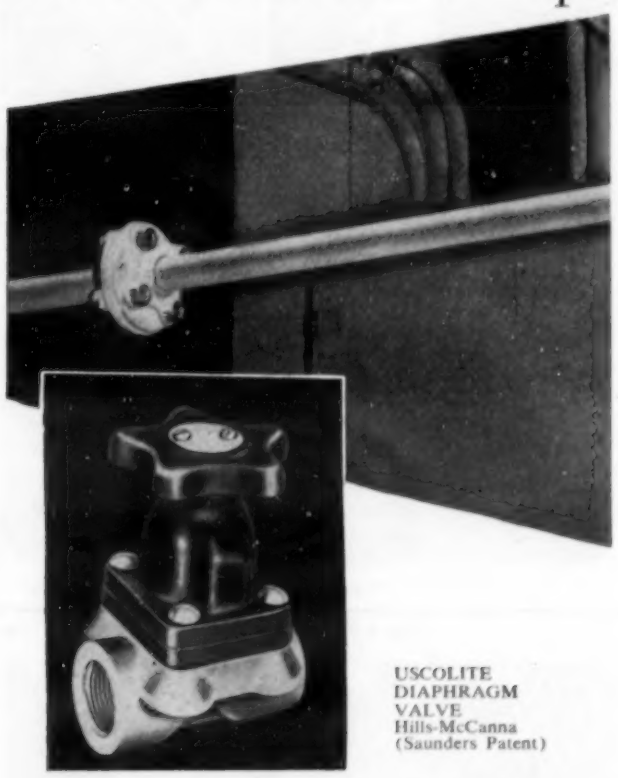
New Karge Profile-Tracer TURN-MAT Attachments. Low cost — economical — turns work never before possible, any metal or plastics bars, 1/32" to 3½", to closest tolerances and micro finishes, all with single cut and single point tool. No Bushings, No Steady Rests, No Centers, No Rollers, No Holes to Drill — Set up or take down in 5 minutes. Write for Complete details or demonstration in your shop.

Write to Dept. IE

TURNOMAT COMPANY, INC.
BROCKPORT, NEW YORK

If you write maker identify as IEN - 4808

Install it... forget it... it's U. S. Uscolite Pipe



USCOLITE DIAPHRAGM VALVE
Hills-McCanna
(Saunders Patent)

No leakage, no corrosion, no maintenance

The Uscolite® pipe shown above is carrying alum in a wood fibre plant in the Far West. Leakage was a big problem in the piping previously used—and a man had to be in constant attendance to insure proper care of the line. With Uscolite, *leaks can't happen*. You simply install Uscolite and forget about it. What's more, Uscolite's smooth interior delivers material with less friction loss, and resists corrosive action of most chemicals.

Uscolite Pipe is made of plastic, by United States Rubber Company. Its light weight means it requires less support. Easy to handle, won't break if dropped. Furnished in standard lengths, can quickly be cut to length and threaded on the job. Also available are Uscolite fittings and diaphragm valves, shown in inset.

Next time you need piping, call any of our selected distributors or consult any of our 26 District Sales Offices, each staffed with engineers. Or write to address below.

US RUBBER

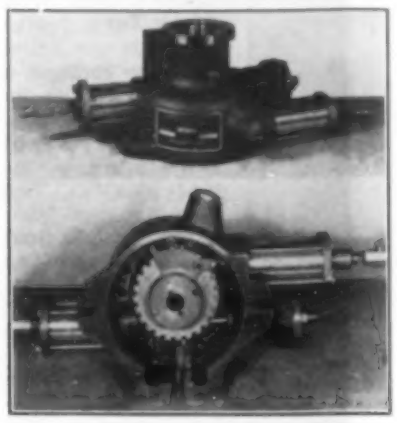
"U. S." Research perfects it
"U. S." Production builds it
U. S. Industry depends on it

UNITED STATES RUBBER COMPANY
Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.
Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings • Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

If you write maker identify as IEN - 4810

INDEXING . . Rotary table, air or oil operated for machine setup

Source: ERICKSON TOOL CO.
2309 Hamilton Ave., Dept. IEN, Cleveland 14, Ohio



Speed Indexer

New design of the company's rotary indexing table, previously described IEN-7132-49, employs a control cylinder and piston, linked directly to the indexing mechanism, to work independently of the actuating fluid employed in the indexing action. The control results in constant uniform feed while allowing maximum speed without danger of damage to the mechanism or the work. The control assembly extends to the right of the main housing as the table is shown in the bottom view.

Equipment includes a standard 24-position index plate that permits an indexing range of 4, 6, 8, 12 and 24 positions. Special plates can be supplied for a maximum of 100 positions. Operation can be tied in with pneumatic or hydraulic controls on a machine so work can be indexed at the proper time without operator attention. The table spindle can be fitted with a center. Application can be made in horizontal or vertical position. Housing diameter is maximum at 6½ inches. Prices start at $365.

If you write maker identify as IEN - 4811

RHEOSTAT . . Ring design 300 watt, for smooth current control

Source: WARD LEONARD ELECTRIC CO.
31 South St., Dept. IEN, Mount Vernon, N. Y.

Bulletin 1116

Resistance wire or ribbon is toroidally wound on the ceramic core of this new Vitrohm ring type rheostat. The core is mounted on a ceramic base and the assembly is vitreous enameled. The enamel protects the wire, keeps it in place, insulates the turns and bonds the core to the base. The contact arm is locked into a cold molded housing equipped with a compression spring that maintains correct pressure of the sintered copper graphite contact shoes on the resistance winding and the collector ring.

Radial motion is prevented by the locking mechanism. The close fit between the housing and arm prevents backlash. The operating shaft measures ⅜ in. in diameter. It rotates in a self-lubricating sleeve bearing. A zinc plated steel stop nut prevents over-travel of the contact arm, permits 317 deg. of rotation.

Standard assemblies, available from stock, range from 1 to 2,500 ohms and from 17.3 to 0.35 maximum amperes. Approximate steps are from 30 to 757. Base diameter is 6 inches. Overall height is about 4¼ inches.

If you write maker identify as IEN - 4812

ELEVATOR . . Adjustable ramps, power and hand units for loading dock

Source: LEROY L. COLON COMPANY
5840 N. Kilbourn Ave., Dept. IEN, Chicago 30, Ill.

Bulletin, "Quick Loader"

Structural frames and non-skid trucking surfaces are employed in these new adjustable ramps for application in a loading dock. One is equipped with motor-driven hydraulic power equipment and rates 10 ton in load capacity. The other is a hand-operated spring counterbalanced unit that rates 5 ton. Safety skirts are employed in the two sides of the tilting member so there is no danger of catching a hand or foot. Nothing protrudes to damage a truck.

The power-operated assembly provides 18 in. of vertical adjustment. It is available in three lengths measuring 96, 120 and 144 in. in overall length with 72, 96 and 120 in. in length of the tilting section. It lies flush with the loading dock floor when it is not in use. List price starts at $1,375.

The smaller assembly mounts a 60 by 60 by 60-in. ramp and employs springs to counterbalance the weight so one individual can raise or lower the outer lip without undue effort. This unit is quoted at a list price starting at $450.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4813

THE INTERNATIONAL

BOXER

PORTABLE STAPLE MACHINE . . . The "Boxer" is a knockout for stapling corrugated or fibre containers. Lightweight (only 4 lbs., 10 oz.) and small (16x3½x7"), it uses the revolutionary International Retractable Anvil . . . stapling filled cartons from the outside. Close your cartons faster . . . neater . . . with fewer staples per unit area, and at less cost per carton.

Write for bulletin No. 101 on the "Boxer." For large daily volume ask about the large automatic Internationals.

INTERNATIONAL STAPLE & MACHINE CO. 805 E. HERRIN ST. HERRIN, ILLINOIS

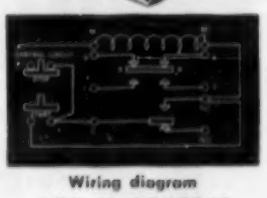
If you write maker identify as IEN - 4814

NEW!

AGASTAT

Trademark

TIME DELAY RELAYS with Remote Push Button Control



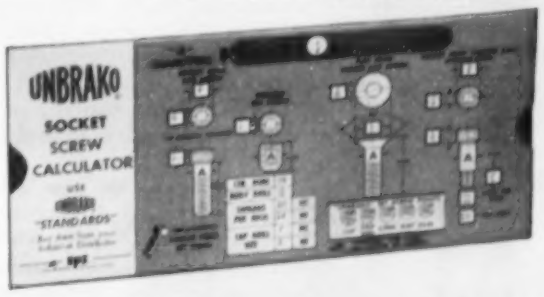
Wiring diagram
NEH-11 AGASTAT

An auxiliary "hold-in" switch affixed to the bottom of these pneumatic relays makes possible a remote push button control of the time delay. Delays easily adjustable from 0.1 second to 10 or more minutes. A.C. and D.C. units, single or double break contacts. All are lightweight, compact, easily mounted and low in cost.

Write for specifications—and ask our application engineers for help with your timing problem. Address Dept. A9-42.

A'G'A DIVISION
ELASTIC STOP NUT CORPORATION OF AMERICA
1027 Newark Avenue, Elizabeth, New Jersey
Pioneers in pneumatic timing

If you write maker identify as IEN - 4815



Our New UNBRAKO Screw Calculator YOURS FOR THE ASKING

This handy pocket-sized slide-rule type socket screw calculator gives diameters, lengths, socket dimensions, threads and drill sizes—in fact, everything you want to know when using UNBRAKO socket screw products.

And it's free. Ask your UNBRAKO distributor or write STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

UNBRAKO SOCKET SCREW DIVISION

Standard UNBRAKOS are sold by leading industrial distributors everywhere.

SPS
JENKINTOWN PENNSYLVANIA

Self-Locking Set Screws | Flat Head Cap Screws | Shoulder Screws | Knurled Head Cap Screws | Dowel Pins | Button Head Socket Screws

If you write maker identify as IEN - 4816

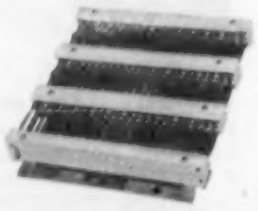
The Tires on Your Trucks

probably had their treads *pre-stressed* to insure extra mileage, in equipment containing TRENT

"FOLDED-and-FORMED" HEATING ELEMENTS

This is another example of the hundreds of different applications for these efficient, long-life heating elements . . . unequalled for easy installation and trouble-free operation.

"Folded-and-Formed" Heating Elements in Standard 12" x 12" Racks — arranged vertically or horizontally, singly or in multiples, to provide any required K. W. at temperatures up to 1350°F. Also available in Custombuilt Racks in wide variety of sizes. *What is YOUR heating problem?*



TRENT INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27, PA.

If you write maker identify as IEN - 4817

Widest power range of any powder-actuated fastening tool

MODEL 450 REMINGTON STUD DRIVER

Six different 32 caliber charges meet every fastening requirement

Each of the six power loads for the Remington Stud Driver is designed to give the right power for the job — whether it's driving the stud into concrete or steel.

New, longer heel caps on all six cartridges mean a perfect gas seal . . . assure arrow-straight driving. Bright colors indicate the right load instantly, no chance for error. You can select the *right* cartridge for each job . . . quickly and easily.

But exceptional power range is just one of the Remington Stud Driver's many advantages. This self-powered tool sets up to 5 fastening studs per minute . . . speeds construction jobs and cuts costs. Its light weight—only 5½ pounds—makes handling easy, even in confined places.

Test-proved to be the world's finest and speediest fastening system, the Model 450 Remington Stud Driver is made by the Remington Arms Company, Inc., *America's oldest sporting arms manufacturer*. Send in the coupon below for your free booklet describing the Stud Driver and its many uses.

"If It's Remington—It's Right!"

Remington DU PONT

MAIL THIS COUPON TODAY

Industrial Sales Division, Dept. IEN-4
Remington Arms Company, Inc.
939 Barnum Ave., Bridgeport 2, Connecticut

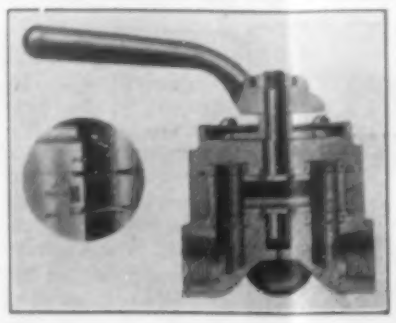
Please send me my *free* copy of the new booklet showing how I can cut my fastening costs.

Name . . . . . .
Position . . . . . .
Firm . . . . . .
Address . . . . . .
City . . . . . *State* . . . . . .

If you write maker identify as IEN - 4819

VALVE . . Rotary hydraulic, 2, 3, 4-way, pressure to 6,000 pounds

Source: REPUBLIC MFG. CO.
1930 W. 77th St., Dept. IEN, Cleveland 2, Ohio



O-ring seals

Low-Torq designates this new valve. Its body encloses a disc that carries internal flow passages. The disc is revolved by a 6-in. lever on the central stem. The valve is characterized by the fact that fluid pressure applies equally on both sides of the disc to "float" it so friction is negligible.

The ports are sealed with rings mounted in recesses in the valve body and cap. Each ring carries a pressure shoulder to employ the internal pressure to hold it against the disc and thus prevent leakage. Back pressure will not unseat the rings. The equal number of rings on each side of the disc prevents off-center pressure.

The valve is available in ⅜ to 1-in. sizes for pressure to 2,000 lb., in ⅛ to 1-in. sizes for pressure to 6,000 lb., and to 1,000 or 3,000 lb. for air or gas service. Ports can be specified on the side or bottom, threaded for pipe connection, or the valve can be supplied with sub-plate mounting.

If you write maker identify as IEN - 4820

WELDING . . Granular flux for gas welding and brazing operations

Source: ANDCO INCORPORATED
235 Thorne Ave., Dept. IEN, Orchard Park, N. Y.

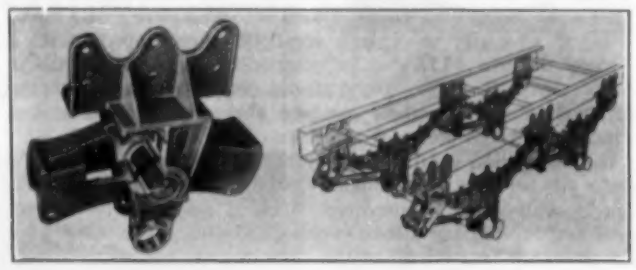
Technical data upon request

Uni-Flux trade names a new granular flux that can be employed to weld through foreign materials on the surfaces of metals such as cast iron, steel, Monel Metal, aluminum, bronze. The flux cleans as it used. It produces an inert atmosphere around the weld area. It can be held in storage over a considerable period of time without danger of deterioration.

If you write maker identify as IEN - 4821

TRUCKS . . Tandem trailer springs, sealed reservoir, lubricated bearings

Source: HUTCHENS & SON METAL PRODUCTS INC.
Box 1355 SSS, Dept. IEN, Springfield, Mo.



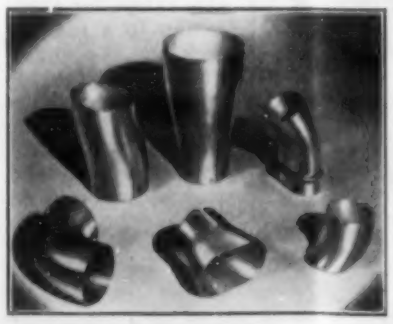
Ask for Forms B2 and T2

Illustrated is a new tandem spring assembly for rear axle support on motor vehicle trailers. The critical center bearing holds a little over a pint of oil and is sealed to prevent escape of the oil or entrance of dirt. The arrangement essentially eliminates chance for any trouble or need for particular attention at this point. The assembly employs progressive type spring hangers that provide an easy ride, loaded or empty, rubber bushed torque arms, torque arm adjustment and construction overall for heavy-duty service.

If you write maker identify as IEN - 4822

TUBE . . Stainless steel, formed and fabricated to specification

Source: FLEXONICS CORPORATION
1333 S. 3rd Ave., Dept. IEN, Maywood, Ill.



Some typical shapes

New service has been set up by the company in which it is prepared to supply its thin wall stainless steel tube in special application in combination with fittings, flexible sections, straight runs. The assemblies meet special requirements involving high temperatures and pressures combined with ability of the stainless steel to resist corrosive conditions.

The tube is available in 15 outside diameters, ranging from 1 to 6 in. in standard construction, from 1.5 to 6 in. in high strength design. It is available in four wall thicknesses. Fittings and component parts can be attached to the straight or flexible designs with circumferential seam welding. In many cases it is possible to make one-piece units to replace multiple part assemblies.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4823

FREE SAMPLE KIT . . .

so you can prove to yourself . . .

New Venus Blueprint Pencils

give clearer, more brilliant markings!

Specially formulated lead is the reason why new Venus Blueprint pencils are best for checking and marking *all* blue or white prints and coarse papers. Leads sharpen to a fine point; never powder, smudge or smear. Opaque markings assure clearer reproduction with no "ghosts." Markings resist oil, dirt, grime. Leads never affected by sunlight or moisture. Electronically controlled color accuracy. *Free* sample kit includes 2 Venus Blueprint pencils (yellow, vermilion) . . . plus a Venus Drawing pencil. Write on your office letterhead today.

Venus . . . trademark of fine craftsmanship in pencils

American Pencil Co., Hoboken, New Jersey

If you write maker identify as IEN - 4824

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00"—in lengths of 4" to 720". Special models for special problems.

A.C.M.I. Borescopes permit close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each Borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

Write for free informational folder, or tell us your problem.

American Cystoscope Makers, Inc.
1241 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as IEN - 4825

THROW THEM AWAY ... *and Save Money*

Regrinding of carbide tools—even the best—consumes time and money. It can be a major item in over-all tooling costs. But—there's a way to eliminate this expense entirely on many jobs. Here's how.

The "Kendex" tool needs no regrinding! It has an indexable insert that can be discarded when all its multiple cutting edges become dull.

By the time replacement is required (at slight cost compared to that of regrinds), the insert has already paid for itself by increased productivity, and to discard it is economical practice.

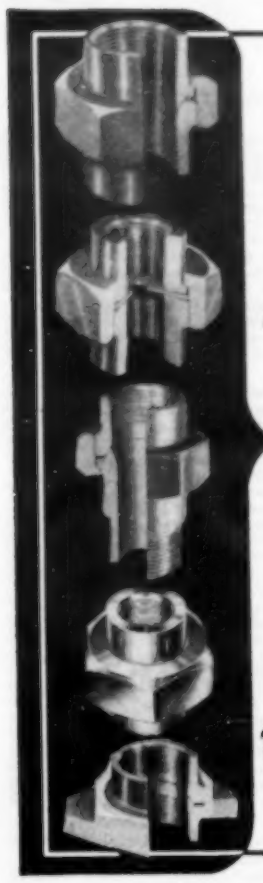
Kendex tools are available in three styles—with round, square, or triangular inserts—as illustrated, and in a range of shank sizes—½" to 1" square.

Perhaps you have jobs on which standard Kendex tools will be suitable—or you may be able to use the standard inserts in conjunction with present tooling. If you desire, one of our Tool Engineers will be glad to assist in working out suitable applications of the "Kendex"* principle to your specific machining problems. Kennametal Inc., Latrobe, Pa.

*KENDEX®

KENNAMETAL
CEMENTED CARBIDE TOOLING THAT INCREASES PRODUCTIVITY

If you write maker identify as IEN - 4826



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL Unions

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Fi-ll Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

Write for Catalog

STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

CATAWISSA VALVE & FITTINGS CO.
50 Mill St. • CATAWISSA, PA.

If you write maker identify as IEN - 4827

Drawings ready—prints ready!

From final drawings to plenty of prints, for production or record...is only a matter of minutes when you have an Ozalid® machine on the premises.

Ozalid reproduction is chemical, instantaneous, without delays between exposure, developing, drying. No intricate adjustments, messy developing solutions, drying equipment, or skilled operators are necessary. Anybody can use an Ozalid.

Ozalid makes copies from anything drawn, written, typed, or printed on translucent material—not only on paper, but plastic surfaces, fabrics, foil as well, in a variety of colors. The finished copies are dry, exact in size. *And cost very little.*

AND the same machine will make duplicates of correspondence, specifications, reports, forms, orders, invoices. You save time, and your prints cost less when you have an Ozalid.

The Ozalid process, machines, and papers are uniform, consistent, dependable. Ozalid service is never far away.

To find out what Ozalid can do for you, call the Ozalid office or distributor listed in your phone book. Or write for full information —to 120 Corliss Road, Johnson City, New York.

Ozalid Printmaster —*copies material up to 54 inches wide, at speeds to 30 feet per minute; has low maintenance; is easy to operate; saves time, trouble, and costs!*

OZALID

A Division of General Aniline & Film Corporation
. . . From Research to Reality
In Canada, Hughes Owens Company, Ltd., Montreal

"I WISH I HAD"

(Continued from page 128)

SURPLUS . . "I wish we had a buyer for fifty 1-hp., 3-phase 220/440-volt 60-cycle ac. motors. They are ball bearing drip proof type, in stock in Brooklyn, N. Y. **IEN W-39**

SURPLUS . . "I wish we had a buyer for our Howe Scale Company, 1948 Dormant scale, Catalog 10226, Cabinet No. 1700. This is a Weightograph Type of scale, particularly suited to weigh castings. Changes in our casting requirements were such that we did not install the scale after we purchased it and it is now in storage in its original boxes in Erie, Pa. **IEN W-40**

SURPLUS . . "I wish we had a buyer for various odd lots of New Departure, Hoover and Fafnir anti-friction bearings. Largest single number is 94 Hoover BB-3123. Next is 83 New Departure 773-L-13 by 1919. We will send a list on request. The bearings are in Worcester, Mass." **IEN W-41**

SURPLUS . . "I wish we had a buyer for all or a part of a small remaining stock of straight bushed V-belt sheaves. They represent the remainder of a considerable stock purchased by us some time ago but now largely replaced by sheaves with taper bushings. We would like to dispose of the complete lot to one purchaser if possible and are prepared to send a stock list on request. Newark, N. J." **IEN W-42**

SURPLUS . . " I wish we had a buyer for 3,000 pieces of Type 302 stainless steel tube, measuring ½ in. in outside diameter with an 0.020-in. wall. The tube is in 6-ft. lengths in storage in Indianapolis." **IEN W-43**

If you write maker identify as IEN - 4829

MARKING . . Electric etcher and demagnetizer, transformer design

Source: ELECTRO ARC SALES CO.
5270 Geddes Road, Dept. IEN, Ann Arbor, Mich.

List price is $95

Hardened tools and production parts of any metal can be marked free hand with this new Easco etching equipment. It operates on 110-volt ac. The work clamps to a ground lead that attaches to the transformer housing or is mounted on a grounded plate. The operator holds the marking pencil with its metal point in one hand. Five heat ranges are selected by turning a knob on the housing face. Overall dimensions of the housing are 10 by 8 by 8 inches.

Work can be demagnetized by placing it on the two poles on top of the transformer housing and then by setting the voltage selector knob at position 5 and throwing the power switch to "on" position. At this point the work is slid off the poles and the power switch is moved to "off" position. In addition, the equipment can be employed for resistance soldering and also for magnetizing.

Standard equipment includes a 3-ft. cable, three tungsten tips, a soldering tool, cable and three carbon tips, ground cable with a spring clamp and a 4-ft. power cable and plug.

If you write maker identify as IEN - 4830

FASTENING . . Driving set to insert split cylindrical rollpins

Source: ELASTIC STOP NUT CORP.
2330 Vauxhall Road, Dept. IEN, Union, N. J.

For production use

Rollpin driving set is a new tool, for application on an Ingersoll-Rand standard pneumatic aircraft riveting hammer Type AVC, to insert Rollpin fasteners into holes drilled to receive them. The set is held in place by a Beehive spring retainer. It presents a slot in which the Rollpin is placed for starting, a hole to guide it while it is being driven into place, a flat face to set it flush and a stud to move it further into countersunk position.

The pin itself, previously described IEN-2044-54, is tubular split design, slightly over-size with reference to the hole in which it is to be used. It compresses as it is driven. It holds in place by expansion so vibration will not loosen it but so it can be driven out at any time. It is designed for use in the place of solid, serrated and taper pins, dowels, axles, keys and as a hinge and clevis pin.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4831

If you write maker identify as IEN - 4832

The automatic Air-Acetylene

TORCH-O-MATIC . . .

$AVES when you're using it!

$AVES when you're not!

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IN-1

APRIL 1954

INDEX TO ADVERTISERS

A A-B-C Packaging Machine Corp. 52
A'G'A Division of Elastic Stop Nut Corp. of America 123
Abart Gear & Machine Co. 34
Acme Electric Corp. 43
Acme Industrial Co. 121
Acme Steel Co. 43
Acro Electric Corp. 28
Acromark Company 42
Acushnet Process Co. 68
Adams, R. P., Co., Inc. 3, 4
Aetna Ball & Roller Bearing Co. 106
Aetna Plywood & Veneer Co. 89
Aget Detroit Co. 14
Aircraft-Marine Products Inc. 82
Air-Hydraulics, Inc. 61
Air-Mite 98
Air Placement Equipment Co. 53
Air Reduction Co. Inc. 63
Ajax Engineering Corp. 27
Ajax Flexible Coupling Co. Inc. 84
Akro-Mils Inc. 4
Alan Wood Steel Co. 29
Allen, Alva F. 34
Allen-Bradley Co. 12
Allied Products Corp. 76
Allied Radio 25
Allis-Chalmers Mfg. Co. 5
Almco 62
Aluminum Co. of America 92
Aluminum Ladder Co. 30
Alvey-Ferguson Co. 128
American Air Filter Co. Inc. 73
American Chain & Cable 67
American Cystoscope Makers Inc. 124
American Gilsonite Co. 51
American Machine & Foundry Co. 31
American Monorail Co. 6
American Pencil Co. 124
American Platinum Works 60
American Society for Metals 3
American Welding & Mfg. Co. 56
Ames, B. C., Co. 110
Ames Iron Works 34
Amidon Engineering Co. 100
Anaconda Wire & Cable Co. 3, 13
Anderson, V. D., Co. 116
Angle Steel Inc. 26
Apco Mossberg Co. 48
Appleton Electric Co. 76
Arbill Glove Co. 26
Arcos Corp. 58
Armco Drainage & Metal Products, Inc. 72
Armour & Company 73
Armstrong-Blum Mfg. Co. 103
Aro Equipment Corp. 98
Artos Engineering Co. 89
Associated Metal Fabricators 52
Associated Research Inc. 114
Atkomatic Valve Co. 7
Atlantic Abrasive Corp. 68
Atlas Valve Co. 103
Aurand Mfg. & Equipment Co. 36
Aurora Pump Co. 18
Automatic Transportation 91
Automotive & Aircraft Div. 67
Autotron Co., The 48
Avery Adhesive Label Corp. 24
Ayerst Laboratories 121

B Babcock & Wilcox Co., Boiler Div. 65
Babcock & Wilcox Co., Refractories Div. 79
Babcock & Wilcox Co., Tubular Products Div. 61
Bakelite Co., A Div. of Union Carbide & Carbon Corp. 81
Ballymore Company 42
Barber-Colman Co. 69, 81
Barco Mfg. Co. 26
Barksdale Valves 62
Bay West Paper Co. 46
Bead Chain Mfg. Co. 103
Behr-Manning Corp. 100
Bellows Company 31
Berkeley Div., Beckman Instruments Inc. 50
Beverly Shear Mfg. Co. 56
Big Joe Mfg. Co. 92
Binks Mfg. Co. 92
Black Drill Co. Inc. 54
Black & Decker Mfg. Co. 128
Black & Webster Inc. 61
Bond Foundry & Machine Co. 51
Bostitch 67
Boston Gear Works 32, 109
Bowser Inc. 112
Brady, W. H., Co. 11, 127
Brainard Steel Division 102
Breeze Corporations Inc. 80
Breuer Electric Mfg. Co. 79
Bridgeport Fabrics Inc. 56
Bristol Co. 71, 100
Brookville Mfg. Co. 46
Brown Engineering Co. 98
Brown, W. R., Corp. 21
Browning Mfg. Co. 3
Brush Electronics Co. 29
Buck Tool Co. 58
Buda Company 106
Buell Engineering Co. 7
Buffalo Pumps, Inc. 107
Burgess-Manning Co. 52
Burt Mfg. Co. 104
Buschman, E. W., Co. 35
Bussmann Mfg. Co. 17
Bustin Firm Grip Grating Corp. 74
Byron Jackson Co. 106

C Cabot, Samuel, Inc. 69
Calculagraph Co. 41
Cambridge Instrument Co. Inc. 16
Cameron Machine Co. 111
Camloc Fastener Corp. 47
Candor Engineering Co. 81
Cannon Electric Co. 110
Capco Products Co. 21
Carboloy Dept. of General Electric Co. 9, 25
Carborundum Company 41, 107
Carpenter Steel Co. 6
Cash, A. W., Valve Mfg. Corp. 19
Catawissa Valve & Fittings Co. 125
Ceilcote Company, The 96
Cellusuede Products Inc. 9
Central Safety Equipment Co. 40
Cerro de Pasco Corp. 22
Chain Belt Co. 7
Chempump Corp. 110
Chicago Bridge & Iron Co. 4
Chicago Eye Shield Co. 14
Chicago Float Works 80
Chicago Mfg. & Distributing Co. 97
Chicago Pneumatic Tool Co. 119
Chicago Rivet & Machine Co. 12
Chicago Wheel & Mfg. Co. 41
Chisholm-Moore Hoist Div. 47
Cincinnati Gilbert Machine Tool Co. 21
Clair Mfg. Co. Inc. 72
Clark Bros. Bolt Co. 33
Clarkson Incorporated 65
Clements Mfg. Co. 49
Cleveland Crane & Engineering Co. 47, 77
Cleveland Tramrail Div. 47, 77
Cleveland Vibrator Co. 74
Clifford Mfg. Co. 93
Climax Molybdenum Co. 4
Cling-Surface Co. Inc. 69
Clipper Mfg. Co. 96
Coated Coil Corp. 24
Coffing Hoist Co. 41
Colorado Fuel & Iron Corp. 13, 38, 58, 73
Columbus McKinnon Chain Corp. 47
Comar Electric Co. 88
Commander Mfg. Co. 35
Cone-Drive Gears Div., Michigan Tool Co. 43
Continental Steel Corp. 108
Continental Tool Works Div. of Ex-Cell-O Corp. 33
Controls Cells Corp. 90
Coppus Engineering Corp. 40
Cords Ltd., Div. of Essex Wire Corp. 93
Counter & Control Corp. 85
Cover, H. S. 27
Crane Co. 4
Crane Packing Co. 97
Crane Packing Co., Lapmaster Div. 91
Cro-Plate Co., Inc. 5
Crozier Machine Tool Co. 49
Cullen-Friestedt Co. 90
Cunningham, M. E., Co. 5
Cuno Engineering Corp. 92
Curtis Development & Mfg. Co. 43
Curtis Pneumatic Machinery Div. of Curtis Mfg. Co. 115
Curtis Universal Joint Co. Inc. 108
Cyclone Fence Div. 103
Cylinder Mfg. Co. 57

D Danly Machine Specialties, Inc. 97
Darnell Corp., Ltd. 108
Dart Union Co. 32
Day Co., The 94
Dayton Rogers Mfg. Co. 8
Dean Products, Inc. 93
De Bothezat Fans Div. American Machine & Metals, Inc. 128
Delpark Corp. 31
Delta Heating Corp. 40
Deluxe Metal Furniture Co. 112
Derby Sealers Inc. 39
Despatch Oven Co. 54
Detex Watchclock Corp. 68
Detroit Tap & Tool Co. 67
DeVilbiss Company 109
De Walt Inc. 31
DeZurik Shower Co. 31
Dickerman, H. E., Mfg. Co. 19
Dico Company 34
Dillon, W. C., & Co. Inc. 102
Dodge Mfg. Corp. 49
Dolge, C. B., Co. 118
Dollin Corp. 28
Doyle Vacuum Cleaner Co. 36
Dragert, C. H., Co. 58
Dravo Corporation 97
Drying & Concentrating Co. 117
Duff-Norton Mfg. Co. 2
Du-Lite Chemical Corp. 66
du Mont Corp. 98
Dumore Company 98, 99
Dunham, C. A., Co. 85
Du Pont, E. I., De Nemours & Co. 15
Durable Rubber Products Co. 42
Dustex Corporation 78

E Eagle Signal Corp. 111
Eastern Tool & Mfg. Co. 50
Eastman Kodak Co. 53, 67, 75
Easton Car & Construction Co. 101
Economy Engineering Co. 45
Edmund Scientific Corp. 24
Elastic Stop Nut Corp. of America 21
Electroline Co. 76
Electro-Mechano Co. 113
Electro-Snap Switch & Mfg. Co. 70
Elgin National Watch Co., Abrasives Div. 87
Elox Corporation of Michigan 56
Emerson Electric Mfg. Co. 51
Emerson-Scheuring Tank & Mfg. Co. Inc. 32
Engelberg Huller Co., Inc. 32
Enterprise Machine Parts Corp. 37
Equipto Div. of Aurora Equipment Co. 30
Erico Products Inc. 100
Eriez Mfg. Co. 56
Evans & Co. 43
Evis Mfg. Co. 13
Ex-Cell-O Corp. 33, 83
Executone Inc. 122
Eynon-Dakin Co. 61

F Faber-Castell, A. W., Pencil Co. Inc. 3
Fairbanks Company 108
Fairfield Mfg. Co. 20
Farrelloy Company 128
Fawick Airflex Div. Federal Fawick Corp. 58
Felters Company 12
FencPainteR Corporation 106
Fenwal Inc. 114
Ferro Corporation 74
Ferrod Mfg. Co. 71
Field Engineering Co. 73
Filmsort Inc. 119
Finnell System Inc. 22
Fisher Governor Co. 30
Fisher Scientific 127
Flash Box Opener Co. Inc. 5
Flexaust Co., The 58
Flexible Steel Lacing 34
Flexonics Corporation 10
Flexrock Company 126
Flightex Fabrics Inc. 61
Flood Company 40
Food Machinery & Chemical Corp., Packing Equipment Div. 77
Foote Bros. Gear & Machine Corp. 94
Force, Wm. A., & Co. Inc. 64
Formsprag Company 107
Foster, L. B., Co. 12
Fostoria Pressed Steel Corp. 117
Foxboro Co. 128
Franklin Machine Co. 14
Frasse, Peter A., & Co. Inc. 19
Friez Instrument Div. of Bendix Aviation Corp. 59
Fulflo Specialties Co. Inc. 30
Fuller Brush Co. 22
Fulton Sylphon Div. Robertshaw-Fulton Controls Co. 97

G G-M Laboratories Inc. 112
Garlock Packing Co. 20
Gast Mfg. Corp. 20
Gay-Lee Company 66
Gear Grinding Machine Co. 30
General Box Co. 30
General Electric Co. 55
General Motors Corp. 2
General Plate Div. of Metals & Controls Corp. 53
General Radio Co. 70
General Tire & Rubber Co. 25
Gerotor May Corp. 102
Gerrard Steel Strapping Div. 64
Gits Bros. Mfg. Co. 63
Goodrich, B. F., Co. 38
Goodyear Tire & Rubber Co. 99
Gottscho, Adolph, Inc. 26
Goulds Pumps Inc. 24
Graef Engineering Co. 100
Gravely Tractors, Inc. 36
Gray Company Inc. 48
Graybar Electric Co. Inc. 95, 113
Gries Reproducer Corp. 122
Grinding & Polishing Machinery Corp. 16
Grinnell Co. Inc. 107
Guardian Electric 96

H Haloid Company 85
Halstead & Mitchell 44
Hamilton Tool Co. 29, 31, 33
Handy & Harman 2
Hankison Corp. 65
Hannifin Corp. 21
Hansen, A. L., Mfg. Co. 117
Hansen Mfg. Co., The 44
Hardinge Brothers, Inc. 50
Hardinge Co. Inc. 20
Harper, H. M., Co. 65
Harrington & King Perforating Co. 70
Hassall, John, Inc. 46
Heinemann Electric Co. 67
heinrich Tools, Inc. 9
High Speed Hammer Co. Inc. 74
Hobbs Mfg. Co. 18, 120
Holliday, W. J., & Co., Inc. 33
Homestead Valve Mfg. Co. 28
Hood Rubber Co. 60
Hoosier Fence Co. 14
Houghton, E. F., & Co. 62
Huot Mfg. Co. 64
Huppert, K. H., Co. 24
Hydroway Scales Inc. 68
Hypro Engineering Inc. 82

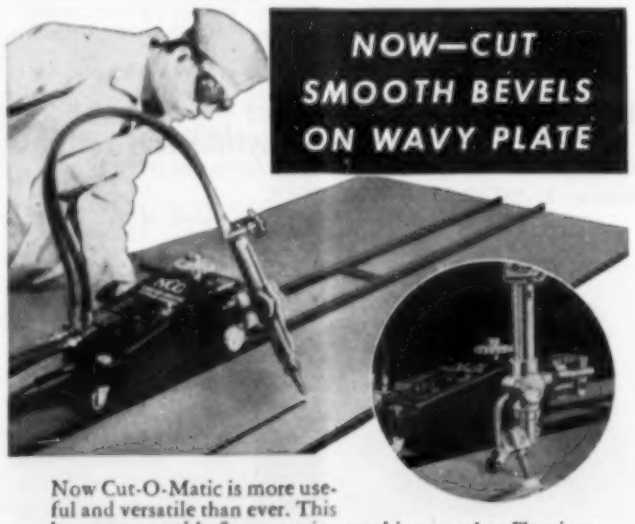
I Ideal Industries, Inc. 11
Illinois Testing Laboratories, Inc. 24, 42
Illinois Tool Works 83
Imperial Brass Mfg. Co. 97
Index Machine Co. 88
Industrial Brownhoist Corp. 35
Industrial Crane & Hoist Corp. 54
Industrial Filtration Co. 31
Industrial Marking Equipment Co. 66
Industrial Products Co. 3
Industrial Tectonics, Inc. 69
International Staple & Machine 123
Ironbound Box & Lumber Co. 45
Irvington Varnish & Insulator Co. 44
Island Equipment Corp. 52

J James, D. O., Gear Mfg. Co. 79
Jari Products Inc. 80
Jeffrey Mfg. Co. 18
Jenkins Brothers 86, 105
Johns-Manville 109
Johnson Bronze Co. 20
Johnson Corporation 10
Johnson, E. F., Co. 114
Johnson Mfg. Corp. 74
Jones, Howard B., Div. Cinch Mfg. Corp. 106
Journal of Commerce, The 126
Joyce-Cridland Company 76
Joy Mfg. Co. 71, 108

K Keller Tool Co. 47, 89
Kellogg, M. W., Co. 120
Kennametal, Inc. 124
Kent Co., Inc. 110
Kester Solder Co. 41
Kidde, Walter, & Co., Inc. 2
Klipfel Valves, Inc. 42
Koehring Company 63
Kritzer Radiant Coils Inc. 89
Kellogg Division, American Brake Shoe Co. 95

L L & L Mfg. Co. 62
Labelon Tape Co., Inc. 100
Laminated Shim Co., Inc. 50
Lamson Mobilift Corp. 56
Lamson & Sessions Co. 68
Landis & Gyr Inc. 106
Laughlin, Thomas, Co. 105
Lawlor, S. C., Co. 66
Lebanon Steel Foundry 102
Ledeen Mfg. Co. 112
Leeds & Northrup 7
Leiman Bros., Inc. 14
Levin, Louis, & Son, Inc. 11
Lewis-Shepard 60
Libbey-Owens-Ford Glass Co. 71
Linde Air Products Co., A Div. of Union Carbide & Carbon Corp. 6, 33, 105

If you write maker identify as IEN - 4837



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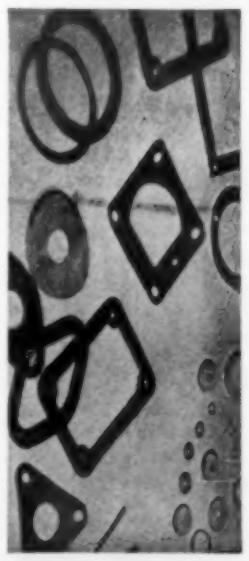

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INDEX TO ADVERTISERS

APRIL 1954

Linemaster Switch Corp. 113
Link-Belt Company 23
Link Industries 29
Lipe-Rollway Corp. 88
Littell, F. J., Machine Co. 77
Logan Company 7
Logan Engineering Co. 90
Logansport Machine Co. Inc. 61
Loral Electronics Corp. 111
Louisville Ladder Co. 59
Lovejoy Flexible Coupling Co. 5
Lubriplate Div., Fiske Bros. Refining Co. 3
Lufkin Rule Co. 72
Lumenite Electronic Co. 36
Lunkenheimer Co., The 51
Lusteroid Container Co. Inc. 77
Lustra Corporation 59

M McCaskey Register Co. 104
McDonald, B. F., Co. 17
McGill Mfg. Co. Inc. 46
MB Mfg. Co., Inc. 92
Machine Products Corp. 45
Madison-Kipp Corp. 29
Magnesium Co. of America 101
Mahon, R. C., Co. 14
Majac Incorporated 104
Mall Tool Co. 44
Manheim Mfg. & Belting Co. 52
Manning, Maxwell & Moore, Inc. 51
Markel Rubber Products Co., Inc. 126
Marlow Pumps 76
Marquette Mfg. Co. Inc. 79
Marsh Instrument Co. 32
Martin Engineering Co. 76
Mason-Neilan Regulator Co. 55
Masonite Corporation 22
Master Specialty Co. Inc. 37
Mateer, Diehl G., & Co. 94
Mathewson Machine Works 16
Maxwell Company 100
Mead Specialties Co. 28
Mechanical Handling Systems, Inc. 10
Meirath Supply & Gasket Co., Inc. 82
Mercury Mfg. Co. 23
Merit Products, Inc. 121
Merrill Brothers 69
Metallizing Co. of America 23
Met-L-Wood Corporation 94
Metzgar Conveyor Co. 6
Meyercord Company 117
Microcard Corporation 59
Micro Switch Div. Minneapolis-Honeywell Regulator Co. 17
Milburn Co., The 102
Milton Roy Co. 71
Mine Safety Appliances Co. 101, 125
Mitts & Merrill 57
Modine Mfg. Co. 22
Morris Machine Works 61
Morse Chain Co. 58
Motoresearch Company 18
Mueller Brass Co. 57
Mystik Adhesive Products 79

N National Acme Co. 53
National Cylinder Gas Co. 126
National Electric Products Corp. 113
National Lock Washer Co. 70
National Pneumatic Co. Inc. 39
National Tool Co. 101
Neilson Chemical Co. 48
New Departure Division 2
New Hermes Inc. 91
Newark Wire Cloth Co. 80
Newcomb-Detroit 55
Newman Industries (America) Inc. 116
Newman Mfg. & Sales Co. 46
Nicholson, W. H., & Co. 15
Nolan Company 26
Norgen, C. A., Co. 91
Norton Company 78
Nugent, Wm. W., & Co., Inc. 116
Nutting Truck & Caster Co. 16
Nylok Corp., The 75

O Oakite Products Inc. 112
Ohio Knife Co. 69
Ohmite Mfg. Co. 60
Oilgear Company 109
Okonite Company 15
O'Neil-Irwin Mfg. Co. 12
Ortman-Miller Machine Co. 88
Oster Mfg. Co. 95
Owatonna Tool Co. 35
Ozalid Corporation 125

P Pabco Products Inc. 60
Pacific Industrial Mfg. Co. 59
Packless Metal Hose Inc. 73
Paddock Tool Co. 8
Paisley Products Inc. 63
Pall Filtration Companies 55
Palley Supply Co. 4
Paltier Corp., The 95
Pangborn Corporation 50
Parker, Charles, Co. 28
Parker-Kalon Corp. 9
Pass & Seymour, Inc. 25
Patent Scaffolding Co. Inc. 113
Pedrick Tool & Machine Co. 22
Peerless Pump Div. Food Machinery & Chemical Corp. 17
Penberthy Injector Co. 57
Penn Metal Co. Inc. 72
Pennsylvania Flexible Metallic Tubing Co. Inc. 49
Permaflex Products Co. 128
Permumix Corp. 37
Petersen Mfg. Co. 46
Philadelphia Gear Works Inc. 11
Philadelphia Quartz Co. 125
Phillips Mfg. Co. 81
Phillips Mine & Mill Supply Co. 122
Phillips Process Co. Inc. 17
Phoenix Electric Mfg. Co. 110
Photoswitch Inc. 62
Pioneer Rubber Co. 15
Polymer Corp. of Pennsylvania 72
Porter-Cable Machine Co. 75
Powers Regulator Co. 87, 107
Pneu-Trol Devices Inc. 77
Prater Pulverizer Co. 77
Prentiss Vise Div. of The Charles Parker Co. 120
Pressed Steel Tank Co. 9
Pritchard, J. F., Co. of California 75
Production Instrument Co. 42
Protective Closures Co., Inc. 87
Proto Tools 10
Pull-Gear Co., The 46

Q Quaker Rubber Corp. Div. of H. K. Porter Co. Inc. 104
Quincy Compressor Co. 47

R R & IE Equipment Div., I-T-E Circuit Breaker Co. 118
Rack Hydraulic Equipment Corp. 111
Radiant Lamp Corp. 52
Rafter Machine Co. Inc. 10
Ramset Fasteners Inc. 90
Rapids-Standard Co. Inc. 78
Rauland-Borg Corp. 42
Raybestos-Manhattan Inc. 49
Raymond Corporation 80
Ready-Power Co. 99
Reeves Pulley Co. 26
Relay Sales 40
Remington Arms Co. Inc. 124
Renton, R. W., & Co. 38
Resistoflex Corporation 104
Revolvator Co. 39
Reznor Mfg. Co. 57
Richmond Foundry & Mfg. Co. Inc. 36
Ridge Tool Co. 115
Rigidized Metals Corp. 8
Riverside Mfg. & Electrical Supply Co. 10
Rivett Lathe & Grinder Inc. 44
Robertshaw Thermostat Div. Robertshaw-Fulton Controls Co. 33
Robinson, Edward E., Inc. 65
Rockford Clutch Div. 45
Rock-Tred Corp. 125
Rockwell Mfg. Co. 48
Rockwood Sprinkler Co. 39, 45
Roebling's, John A., Sons Corp. 79, 85
Roll-A-Reel 64
Rome-Turney Radiator Co. 41
Rotary Lift Co. 104, 114
Roura Iron Works Inc. 97
Rowe Methods Inc. 54
Ruemelin Mfg. Co. 9
Ruger Cranes 74

S Safety Socket Screw Co. 82
Sales Service Machine Tool Co. 19
Sarco Company, Inc. 22
Sarkes Tarzian Inc., Rectifier Div. 44
Sauereisen Cements Co. 101, 119
Scherr, George, Co. Inc. 37, 47
Schrader's, A., Son 84, 117
Schramm Inc. 62
Scovill Mfg. Co. 84, 117
Seamless Rubber Co. 105
Seating Inc. 43
Sentinel Glass Co. 13
Service Caster & Truck Corp. 71
Service Machine Co. Inc. 50
Service Recorder Co. 74
Severance Tool Industries Inc. 36
Sexauer, J. A., Mfg. Co. Inc. 12
Shakeproof, Div. of Illinois Tool Works 87
Sheldon Machine Co. Inc. 119
Shenango-Penn Mold Co. 68
Shoe Form Co. Inc. 18
Signode Steel Strapping Co. 101
Simmons Fastener Corp. 40
Simonds Abrasive Co. 20
Simplex Time Recorder Co. 100
Simpson Electric Co. 111
Skil Corporation 66
Skinner Electric Valve Div. Skinner Chuck Co. 70
Smooth-On Mfg. Co. 29
South Bend Lathe Works 37
South Chester Corp. 96
Southern Screw Co. 16
Sparks, A. J., & Co. 122
Speed Selector Inc. 64
Speedway Mfg. Co. 84
Spence Engineering Co. Inc. 39
Spencer Thermostat Div. of Metals & Controls Corp. 107
Spencer Turbine Co. 65
Sprague Electric Co. 81
Spray Engineering Co. 23
Sprout-Waldron & Co. 67
Square D Co. 15, 44
Stackbin Corp. 19, 85
Stackpole Carbon Co. 36
Standard Industrial Products Co. 20
Standard Pressed Steel Co. 119, 121, 123
Stanley Electric Tools 11
Star Stainless Screw Co. 120
Starrett, L. S., Co. 115
Sta-Warm Electric Co. 31
Stearns Magnetic Inc. 128
Sterling Electric Motors 28
Stewart Warner, Alemite 59, 86
Stokvis-Edero & Co. Inc. 27
Stonhard Company 127
Stonehouse Signs, Inc. 8
Storm-Vulcan, Inc. 112
Sturtevant Mill Co. 26
Sturtevant, P. A., Co. 113
Sugar Beet Products Co. 82
Superior Pneumatic & Mfg. Inc. 86
Superior Tube Co. 93
Sweet, H. C., Co. 64
Swivelier Co., Inc. 23
Symmons Engineering Co. 110
Syncro Corporation 30
Synthane Corporation 57

T Taber Instrument Corp. 78
Tel Bender Inc. 6
Taylor Instrument Companies 103
Taylor-Stiles & Co. 81
Tech Products Inc. 34
Templeton, Kenly & Co. 7
Tennant, G. H., Co. 35
Thermex Co. Inc. 86
Thermo Electric Co. Inc. 16
Thomas & Betts Co. Inc. 105
Thomas Truck & Caster Co. 8
Thomson Industries Inc. 93
Thriftmaster Products Corp. 27
Titan Tool Co. 91
Titeflex Inc. 16
Toledo Scale Co. 95
Tomkins-Johnson Co. 56
Torit Mfg. Co. 118
Torrington Co., The 35
Towmotor Corp. 25
Townsend Company 70
Transeal, Ltd. 84
Tranter Mfg. Co. 21
Trent Inc. 124
Trico Fuse Mfg. Co. 8
Triplett Electrical Instrument Co. 120
Trombetta Solenoid Corp. 5
Truscon Steel Div. Republic Steel 121
Turnamat Co., Inc. 123
Tuthill Pump Co. 126
Twin Disc Clutch Co. 53

U Udylite Corporation 25
Union Carbide & Carbon Corp., Bakelite Co. 81
Union Carbide & Carbon Corp., Linde Air Products Co. 6, 33, 105
Union Special Machine Co. 99
Unit Crane & Shovel Corp. 83
United Electric Controls Co. 75
U. S. Electrical Motors Inc. 118
United States Instrument Corp. 55
United States Rubber Co. 115, 123, 127
United States Steel Corp. 65
United States Steel 64, 65, 103
United States Stoneware Co. 52
Universal Engineering Co. 99
Universal Mfg. Corp. 32
Up-Right Scaffolds 83
Uptegraff, R. E., Mfg. Co. 51

V Valvair Corporation 127
Veeder-Root Inc. 105
Velocity Power Tool Co. 125
Viking Pump Co. 18
Visking Corp., Plastics Div. 116
Vogel-Peterson Co. 115
Vulcan Tool Co. 90

W Waco Mfg. Co. 40
Wade & Sons 6
Wagner Electric Corp. 15
Walker-Turner Div. Kearney & Trecker Corp. 114
Ward Leonard Electric Co. 11
Washington Steel Corp. 28
Waterman Engineering Co. 6
Waterman Products Co. Inc. 62
Wayne Pump Co. 8
Webb, Jervis B., Co. 14
Webber Mfg. Co. Inc. 106
Weber Addressing Machine Co. 10
West Disinfecting Co. 89
West Point Mfg. Co. 98
Western Chemical Co. 53
Western Coating Co. 84
Western Mfg. Co. 13
Western Precipitation Corp. 23
Western Tool & Mfg. Co. Inc. 7
Westinghouse Air Brake Co. 37, 75
Weston Electrical Instrument Corp. 93
Wheel Trueing Tool Co. 54
Wheelco Instruments Div. Barber-Colman Co. 49
White, S. S., Dental Mfg. Co. 83
Whiting Corp. 45
Whitney Metal Tool Co. 91
Wiegand, Edwin L., Co. 5, 11
Wiggins, E. B., Oil Tool Co., Inc. 18
Wilcolator Co., The 48
Wilkerson Corporation 63
Williams Gauge Co. Inc. 88
Willson Products Inc. 109
Wing, L. J., Mfg. Co. 92
Wittek Mfg. Co. 37
Wood Conversion Co. 78
Worthington Corporation 19

YZ Yale & Towne Mfg. Co. 13
"Yankee" Tools, A Div. of The Stanley Works 86
Yarnall-Waring Co. 27
Zenith Electric Co. 96

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ENGINEER . . "I wish I had contact with a manufacturing or engineering firm requiring the services of a young executive with 15 years of experience in plant management, design, construction, operation, maintenance, sales and finance. I am at present in Detroit." **IEN W-32**

HANDLING . . "I wish we had a source of supply for equipment that would assist us in taking punch press dies apart for spray cleaning, lubrication and reassembly for storage. We are located in Kansas City, Mo." **IEN W-33**

MATERIAL . . "I wish we had contact with a source for a material that could be processed or molded and, when hard, provide physical and electrical properties similar to porcelain in addition to good machining properties. We could use such a material to make holding fixtures for induction heating operations. We are located in Iron Mountain, Mich." **IEN W-34**

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NEW PRODUCT . . "I wish we had a new patent protected device that we could manufacture and market for use in processing or handling granular and pulverized materials. We have successfully introduced and developed a world wide market for such products. We are in Detroit, Mich." **IEN W-36**

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(Please turn to page 125)

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